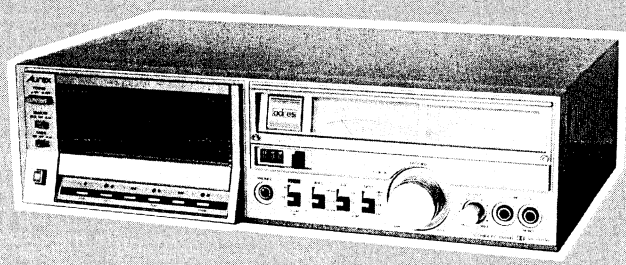
SERVICE DATA
FILE NO. 100-125

TOSHIBA

STEREO CASSETTE DECK

PC-X60AD



SPECIFICATIONS

Drive System:	2-motor IC logic control system.
Motors:	DC servo capstan drive motor and DC reel drive motor.
Heads:	AS (All-Sendust) recording/playback head, AF (dualgap ferrite) erase head.
Frequency Response:	20 Hz ∿ 20,000Hz for metal tapes at −20 dB 20Hz ∿ 18,000Hz for chrome tapes at −20 dB 20Hz ∿ 17,000Hz for normal tapes at −20 dB 20Hz ∿ 12,500Hz for metal tapes at 0 dB 20Hz ∿ 8,000Hz for chrome tapes at 0 dB
S/N Ratio:	58 dB (peak level, WTD) without noise reduction 63 dB (peak level, WTD) with Dolby NR More than 80 dB (peak level, WTD, metal tape) with ADRES
Dynamic Range:	100 dB (ADRES IN, 1kHz, metal tape)
Total Distortion.	0.3% (ADRES IN, 400Hz, metal tape)
Wow & Flutter	JIS 0.035% (WTD, RMS) DIN ±0.14% (WTD, peak to peak)
Bias Frequency:	85 kHz
Fast Forward and Rewind Time:	Approx. 70 sec. for C-60 tapes
Semiconductors:	10 ICs, 75 transistors, 51 Diodes, and 3 LEDs
Inputs Jacks: (Sensitivity & Impedance):	MIC: 0.25mV/600 ohm to 10k ohm LINE: 70mV/50K ohm
Outputs Jacks. (Sensitivity & Impedance):	LINE. 0.4mV/50k ohm Headphone: 0.4mW/8 ohm
Power Supply:	240V AC, 50Hz (for U.K. and Australia) 220V AC, 50 Hz (for European Countries except U.K.)
Power Consumption:	38W
Major Dimensions:	420(W) x 120(H) x 280(D)mm (including knobs and feet)
Weight:	6 kg

Specifications are subject to change without notice.

TE, TU, AY

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DOLBY SYSTEM

*Noise Reduction System is manufactured under license from Dolby Laboratories.
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1. FEATURES

- **Built-in ADRES (Automatic Dynamic Range Expansion System) gives you a vast improvement in performance**
  Overall S/N ratio: More than 80 dB (peak level, WTD) —10 to 20 times better than conventional systems.
  Dynamic Range: 100 dB (at 1kHz) —20 to 30 times better than conventional systems.
  Distortion: 0.3% (400 Hz) — 1/2 that in conventional systems. With large inputs, distortion is further reduced to 1/6 that in conventional systems.

- **Metal Tape**
  The AS (All-Sendust) head of the PC-X60AD is fully suited to metal tapes. The result is greater peak margins during recording and playback in both the mid and high frequency ranges.
- **Wide Range Peak Meters**
  Featuring very high sensitivity (attack time of only 10ms), the peak-reading meters monitor input signals over a much wider range from —40 dB right up to +10 dB.
- **Die-Casting Front Panel with Integrated Mechanical Structure**
  To reduce the effects of external vibrations and ensure that tape transport mechanical performance remains as new for much larger than normal, the integrated transport mechanism has been incorporated directly into the precision-engineered die-casting front panel.
- **Tape Transport Further Stabilized by Advanced Mechanical Design**
  Tape transport in the PC-X60AD has been further stabilized by independent low-speed reel motors, a motor-driven take-up reel tension system, and a direct-coupled idler/reel mechanism.
- **Feather-touch transport mode keys for simpler, smoother, yet faster control.**
- **Circuitry designs ensure high quality sound reproduction.**
- **AS (All-Sendust) head selected for superb sound reproduction matched by equally outstanding long-life low-wear characteristics.**
- **Memory stop and memory play functions.**
- **Automatic Recording/Playback (separate audio timer required)**
- **Remote control (with optional remote control unit)**

2. OPERATING CONTROLS

■ NAMES AND FUNCTIONS

FRONT VIEW

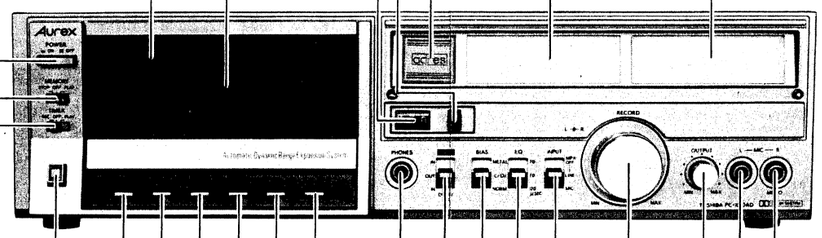


Figure 1

[POWER] Power Switch
When the POWER switch is pressed (ON), the tape illuminator lamp, the peak level meters light to indicate that the tape deck is ready for use.

[MEMORY] Memory Switch
To use the memory, first reset the tape counter to [000] before starting either recording or playback, and set the MEMORY switch to either STOP or PLAY, as required. After completion of the recording or playback rewind the tape.
〈STOP〉 The memory will stop the tape automatically when the tape counter reads [999] if the MEMORY switch has been set to STOP position.
〈PLAY〉 Or after stopping at [999], the memory will automatically start playback if the MEMORY switch has been set to PLAY position.

[TIMER] Timer Standby Switch
With an audio timer (available from your local audio dealers), your PC-X60AD cassette tape deck can be used as a morning alarm (automatic playback) or to record programs in your absence (automatic recording). For normal operation, always leave the TIMER switch in the OFF position.

[▲] Eject Button
The cassette compartment door can be opened (only after tape transport has stopped) by pressing this button.

[■ STOP] Stop Key
Tape transport stops (during any mode) when this key is pressed.

[● REC] Record Key
To begin recording, press this key together with the PLAY [▶] key. The recording and play indicator lamps will light. If the PAUSE [▮▮] key is then pressed, the PLAY [▶] indicator lamp will exstinguish, and the tape deck pause in the recording standby mode. It is not possible to put the PC-X60AD into recording mode when there is no cassette tape loaded in the cassette compartment, or when the erasure prevention tab of loaded cassette has been broken off. (The erasure prevention tap is in the back edge of the cassette.)

[◀◀] Rewind Key
Press this key to rewind the tape.

Cassette Compartment Door

Tape Illuminator Lamp
Convenient for determining how much tape remains when recording or playback.

[▮▮ PAUSE] Pause Key
To halt tape transport temporarily during either recording or playback, press this key. To start again in the same mode, simply press the PAUSE key again. The PAUSE indicator lamp lights to show that the deck is being held in "standby".

[▶▶] Fast Forward Key
Tape may be fast wound in the forward direction pressing this key.

[▶ PLAY] Play Key
Press this key to play a recorded tape. The corresponding indicator lamp will also light up.
If the PAUSE [▶] key is pressed during playback, the PLAY indicator lamp will exstinguish, and the tape deck will pause in playback standby mode.

Tape Counter

Counter Reset Button
To find recorded parts of a tape, make a note of the tape counter reading when recording. The tape counter can be reset to [000] at any time by simply pressing the reset button.

Noise Reduction Switch (adres/Dolby NR*)
For adres recording, or playback of adres recorded tapes, set this switch to the adres IN position.
Besides practically eliminating tape noise (tape hiss) across the complete frequency band, the dynamic range is also expanded automatically for clearer and more natural sound reproduction.

[DOLBY NR*] Dolby NR* Switch
Set the switch to the DOLBY NR IN position for Dolby recording and playback of Dolby recorded tapes. Tape hiss in the mid to high frequency ranges will thus be reduced.

[PHONES] Headphone Jack
For individual listening or monitoring purposes, plug headphones into this jack.

Adres Indicator
When the Noise Reduction switch is set to the adres IN position, the adres mark will light.

Peak Level Meters
These meters show the levels of the input signal when recording, and the levels of the recorded signal when playing back.

[MIC] Microphone jack
For live microphone stereo recordings, insert the microphone plugs into these jacks. For monaural recordings with only one microphone, plug into the right-hand (R) jack.

[OUTPUT] Output Control Knob
The level of the output signals at the LINE OUT/PLAY terminals is adjusted with this control.
The output level can thus be matched with the output levels of tuner and turntable connected to the same amplifier.
Note that the headphones output level can also be adjusted with this control.

RECORD Level Adjustment Control Knob
Adjust Recording levels for line and mic input signals, etc., with this control. The inner knob is for the right channel, and the outer knob is for the left channel.

[INPUT] Input Selector Switch
Select the desired program source to be recoded by setting this switch to the corresponding position. The upper position (MPX OFF) is for records and tapes, the middle position (LINE) for FM stereo broadcats, and the lower position (MIC) for live microphone recordings.

[BIAS] [EQ] Bias/EQ Switches
Set the bias and equalization tape selector switches according to the type of tape being used.

BACK VIEW

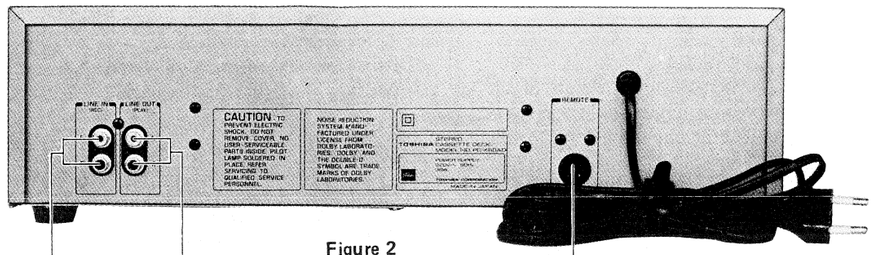


Figure 2

[LINE IN/REC] **Line In/Rec Terminals**
Connect these terminals to your amplifier for recording.

[LINE OUT/PLAY] **Line Out/Play Terminlas**
Connect these terminals to your amplifier for playback.

[REMOTE] **Remote Control Jack**
The Aurex RM-15 optional remote control unit can be connected to this jack.

3. DISASSEMBLY INSTRUCTIONS

REMOVAL OF TOP COVER

1. Remove six screws ((A) point on Figure 3) from each side of Top cover.
2. Lift up the bottom of unit and Front panel upwards, the Top cover can be removed from the unit.

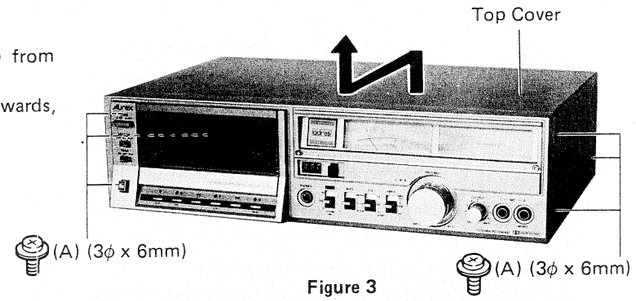


Figure 3

REMOVAL OF CASSETTE COVER

1. Press the top and bottom of Cassette cover with fingers, and push upward.
   Then the Cassette cover can be removed from Front panel (Figure 4).

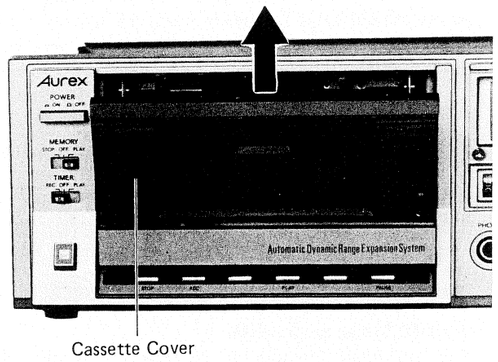


Figure 4

REMOVAL OF FRONT PANEL (See Figure 5 through 13)

1. Remove three knobs (B). See Figure 5.
2. Remove seven screws (C) from the bottom plate. See Figure 6.
3. Remove four screws (D), holding the panel Bracket. See Figures 7 and 8.
4. Remove three screws (E) on the mounting plate. The adres indicator and the meters can be removed. See Figure 9.
5. Remove two plastic Rivet (F) from ASO P.C. Board and take off the Counter Belt on Tape Counter. See Figure 10.

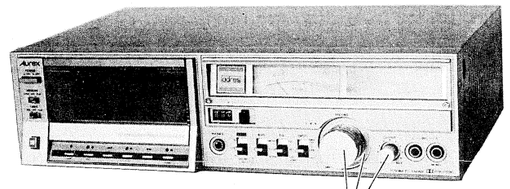


Figure 5

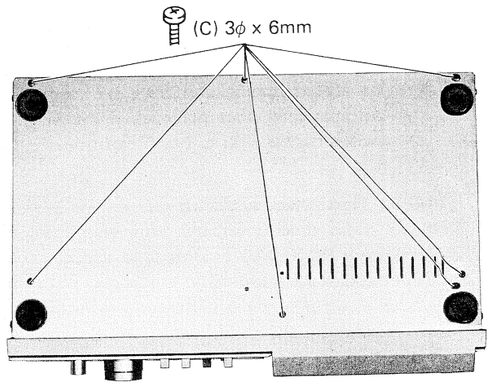


Figure 6

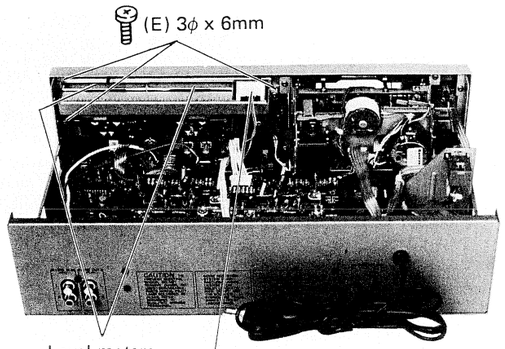


Figure 9

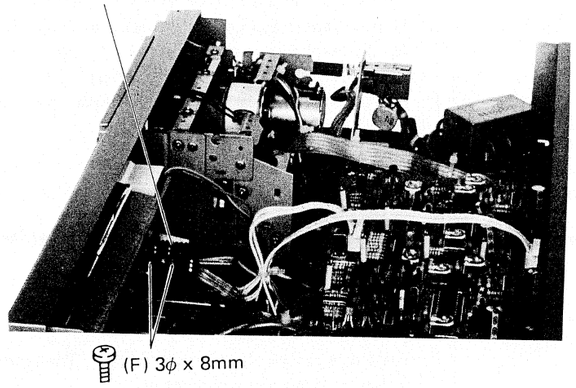


Figure 10

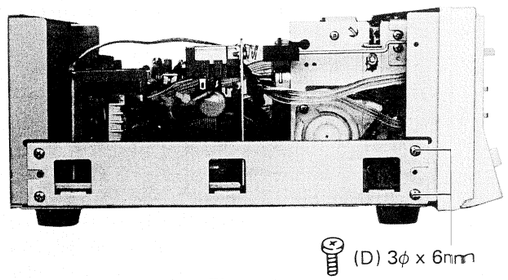


Figure 7

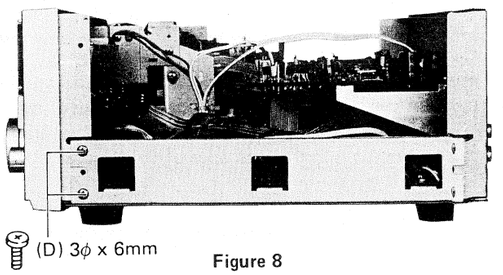


Figure 8

6. Remove four screws (G) from ADRES P.C. Board. See Figure 11.
7. Remove eight screws (H).
8. Remove three screws (I) from keyboard switch P.C. Board and remove two screws (J) from switch P.C. Board. Front Panel can be removed from unit.

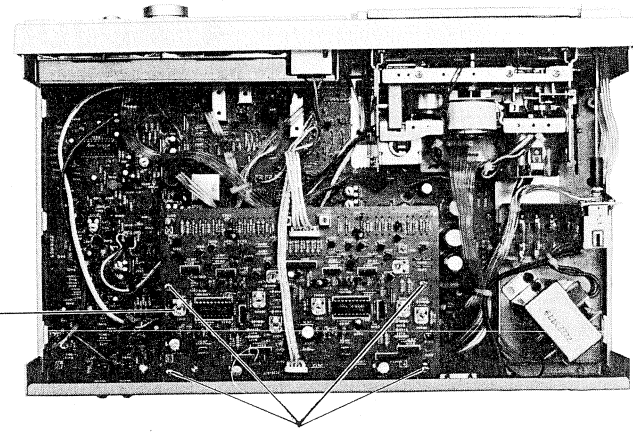


Figure 11

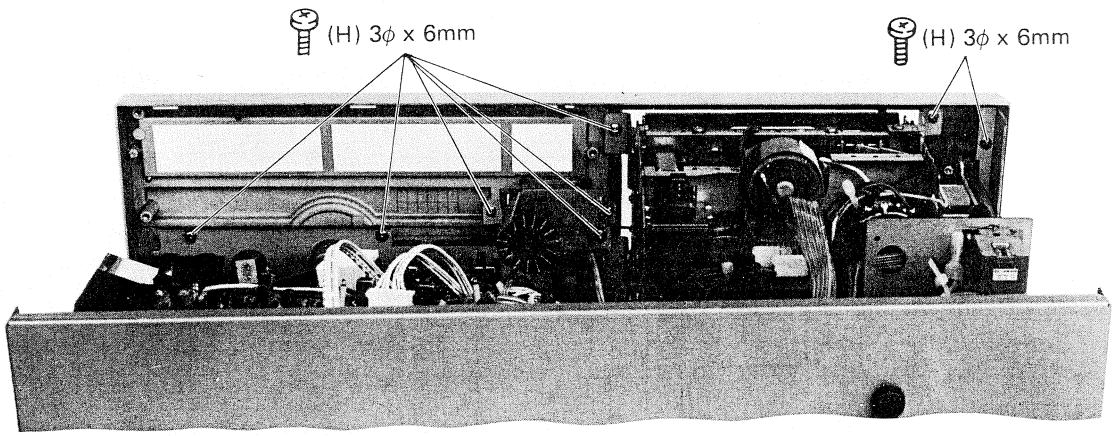


Figure 12

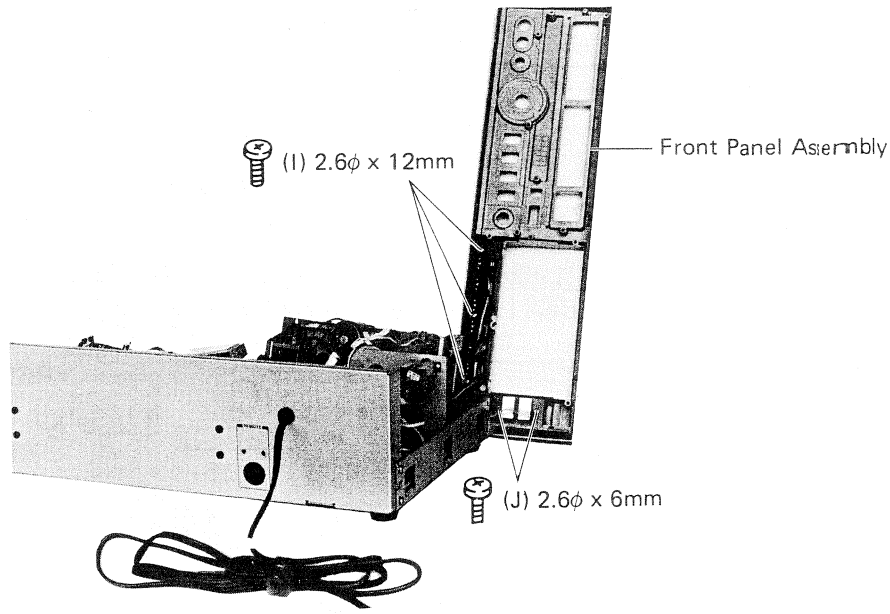


Figure 13

4. ADJUSTMENTS

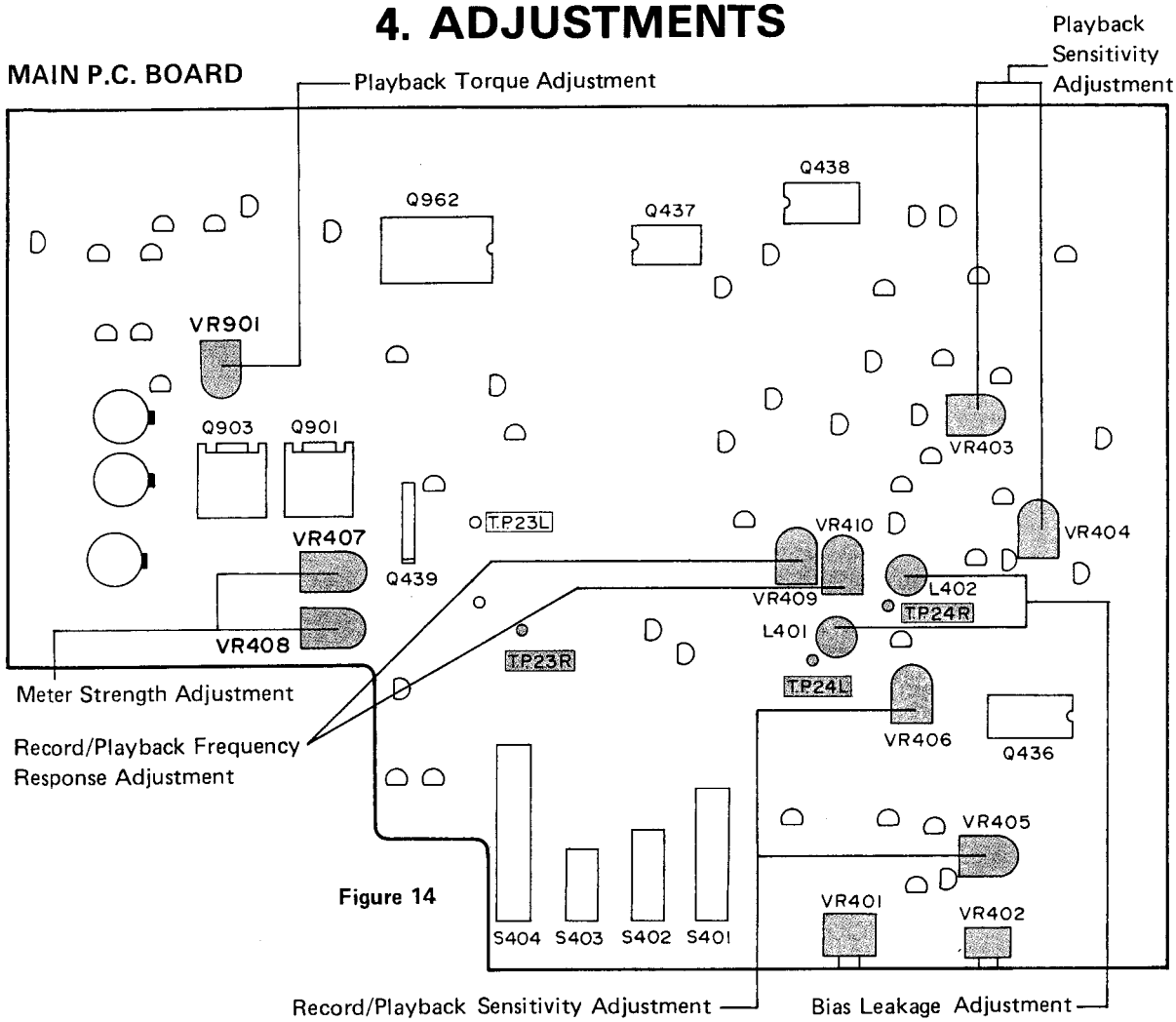


Figure 14

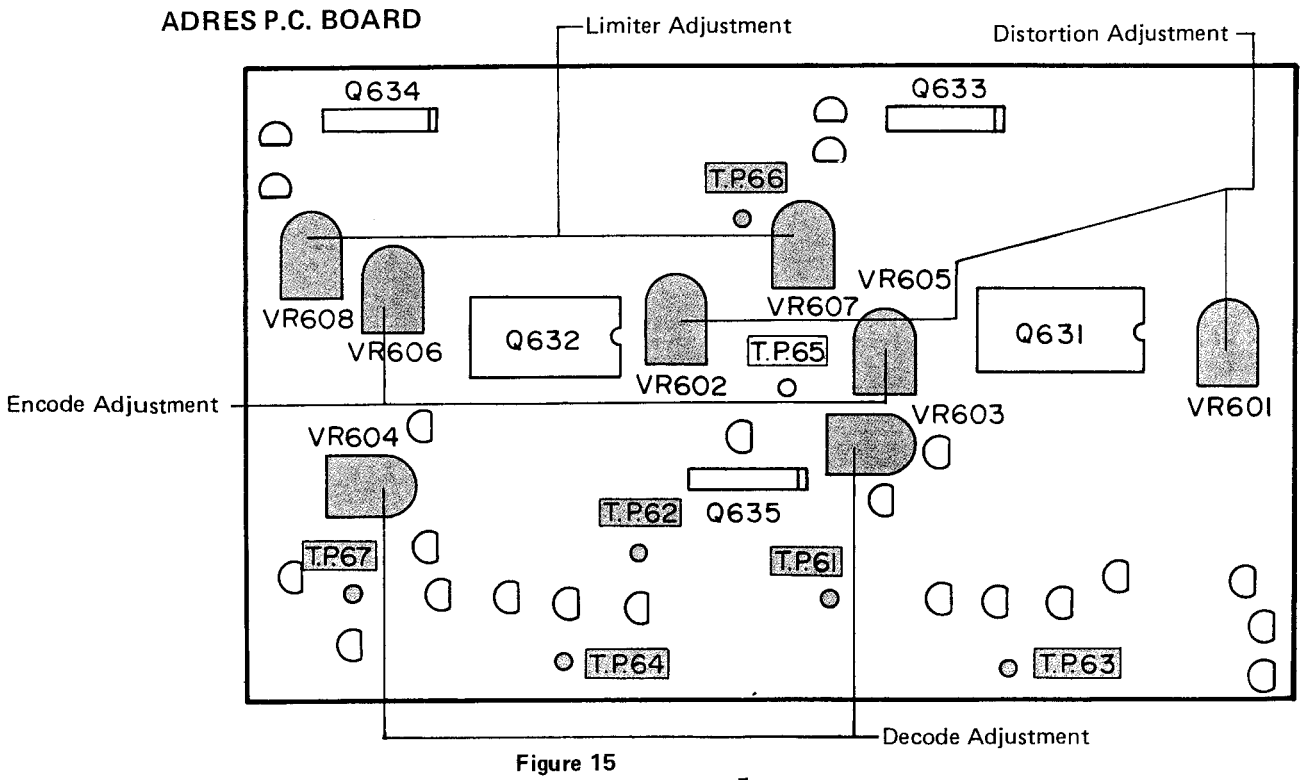


Figure 15

ADJUSTMENT PROCEDURE

	No.	Description	Nominal Specs.	Test Tape	Volume Control		Switch Position				Adjustment Point	Test Point	Test Freq./ ATT	Remarks
					OUT	REC	BIAS	EQ	INPUT	Adres				
	1	Head Azimuth Adjustment	MAX	MTT-114	MAX	–	NOR	NOR	LINE	OUT	Head Azimuth Adjustment Screw	LINE OUT	–	After adjustment lock with screw point.
MAIN P.C. BOARD	2	Playback Torque Adjustment	40g-cm	Torque Tape	–	–	–	–	–	–	VR901	–	–	In case of no using a torque tape, adjust VR901 to be 2.7V at both terminal voltage of the motor.
	3	Playback Sensitivity Adjustment	580 ±10mV	MTT-150	MAX	–	NOR	NOR	LINE	IN	VR403 VR404	TP61 TP62	–	
	4	Output Noise Level	Under 2.0mV	Blank Tape	MAX	–	NOR	NOR	LINE	OUT	–	LINE OUT	–	
	5	Line Input Level Adjustment	580mV ±10mV	–	MAX	Adjustment	NOR	NOR	LINE	IN	REC-VR	TP61 TP62	400 Hz –20 dB	
	6	Meter Strength Adjustment	Meter Scale at 0 dB	–	MAX	Adjustment	NOR	NOR	LINE	OUT	VR407 VR408	Meter Scale	400 H –23 dB	
	7	Bias Leakage Adjustment	MIN	–	MAX	Adjustment	CrO_2	CrO_2	LINE	–	L401 L402	TP24L, R	–	In pause mode, Bias Osc does not operate.
	8	ADRES Adjustment (REC)	300mV	–	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	Attenuator	TP61 TP63	1 kHz Adjustment	Refer to the following NOTE.
	9	Record/Playback Sensitivity Adjustment	Monitor Output ±0.2 dB	NEW SA	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR405 VR406	LINE OUT	400 Hz –23 dB	
	10	Record/Playback Frequency Response Adjustment	0 ±1dB	NEW SA	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR409 VR410	LINE OUT	400 Hz – 10 kHz –43 dB	
	11	Record/Playback Sensitivity Measurement	Monitor Output 0.2 dB	NEW SA	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	(VR405) (VR406)	LINE OUT	400 Hz –23 dB	If sensitivity does not fall within specs., readjust the VR405 and VR406.
ADRES P.C. BOARD	12	ENCODE Adjustment (REC)	300mV	–	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR605 VR606	TP63 TP64	1 kHz Adjustment	
	13	Limiter Adjustment (REC)	–2 dB	–	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR607 VR608	TP63 TP64	1 kHz to 10 kHz Adjustment	Read difference from 1 kHz to 10 kHz.
	14	Distortion Adjustment (REC)	Under 0.2%	–	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR601 VR602	TP63 TP64	1 kHz Adjustment	
	15	DECODE Adjustment (PB)	300mV	–	MAX	Adjustment	CrO_2	CrO_2	LINE	IN	VR603 VR604	TP63 TP64	1 kHz Adjustment	Connect to TP65 and TP66 (Change from REC to PB mode) After adjustment disconnect.
	16	Tape Speed Measurement	3000 ±15 Hz	MTT-111	MAX	—	NOR	NOR	LINE	OUT	Semi-fixed resistor in the motor.	LINE OUT	—	

Measurement Conditions: ● Input: 0 dB = 1 Vrms ● LINE IN: Input Impedance: 600Ω ● LINE OUT: Load Impedance: 47KΩ ● Test Point Impedance: No load.

NOTE: Adaptable to any kind of tapes by varying the supply voltage of BIAS OSC circuit (552, 553).

(1) When an adjusting tape (desired) is a higher bias tape than an SA tape.
R553: More than 220 ohm
R552: More than 10 ohm

(2) When an adjusting tape (desired) is a lower tape than an SA tape.
R553: Less than 220 ohm
R552: Less than 10 ohm
or To add a resistor
R552: Less than 10 ohm

5. RECORDING LEVEL ADJUSTMENT

Generally, the type of tape used and the recording level setting will effect the recording frequency response. For example, the frequency response of metal tapes (particularly in middle and high frequency regions) is considerably better than normal tapes at the same level setting (see Fig. 16).
Furthermore, the recording/playback frequency response is also improved by setting the recording level at somewhat lower levels for the same tape (see Fig. 17).
If, however, the recording level is set too low, noise tends to become more prominent (i.e. SN ratio deteriorates). But since the PC-X60AD incorporates the adres: (Automatic Dynamic Range Expansion System), tape hiss is practically negligible. This means that recording levels in this tape deck can be set at lower values (particularly when recording program sources containing a large proportion of high frequency sounds) without noise becoming noticeable. Hence, fine quality recordings with frequency response extending well into the high frequency region, and featuring a very high SN ratio can be achieved, Note that by using lower recording levels, the resultant playback level will also be relatively low, but this may be readily compensated by readjustment of the amplifier volume control. The peak level meters featured in this tape deck are extremely sensitive to large transient inputs (attack time of 10 ms). In comparison to normal VU meters, transient signals read 8 to 10 dB higher in the PC-X60AD, while continuous "average level" signals read about 4 or 5 dB higher.

Frequency Response Curves for Different Types of Tapes

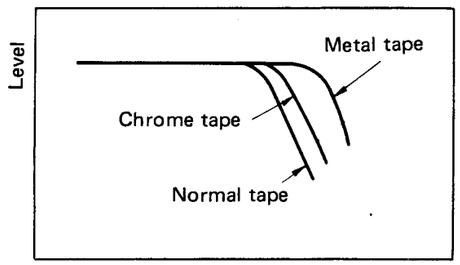


Figure 16

Frequency Response Curves at Different Recording Levels

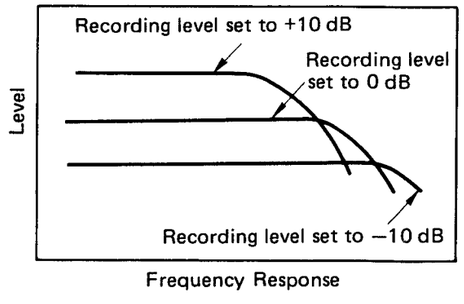


Figure 17

Maximum Recording Level Settings

Type of Tape	Maximum level meter readings
Normal tape	−10 ∿ −5 dB
Chrome tape	−5 ∿ 0 dB
Metal tape	0 ∿ +6 dB

Lower Level settings are recommended for program sources with greater high frequency sound content.

Table 1

6. MAJOR ADRES FEATURES

adres: contains a variable emphasis circuit designed to vary the emphasis characteristics according to the input signal level. By contracting and expanding the signal right across the complete frequency sectrum during the recording and playback processes, a clear, powerful playback signal may be obtained with a greatly expanded dynamic range and vastly improved SN ratio.

Because of the effective value detector system in the adres: level sensor circuit, there is practically no mismatching due to differences in tape and tape deck characteristics. Furthermore, any mismatching between input and output levels does not result in a significant change in sound quality.

Furthermore, by keeping the contraction/expansion ratio to a power of almost 1.5, and by incorporating the variable emphasis circuit, there is very little "breathing" phenomenon. In other words, the adres: system is the right type of noise reduction system for cassette tape decks.

Block Diagram

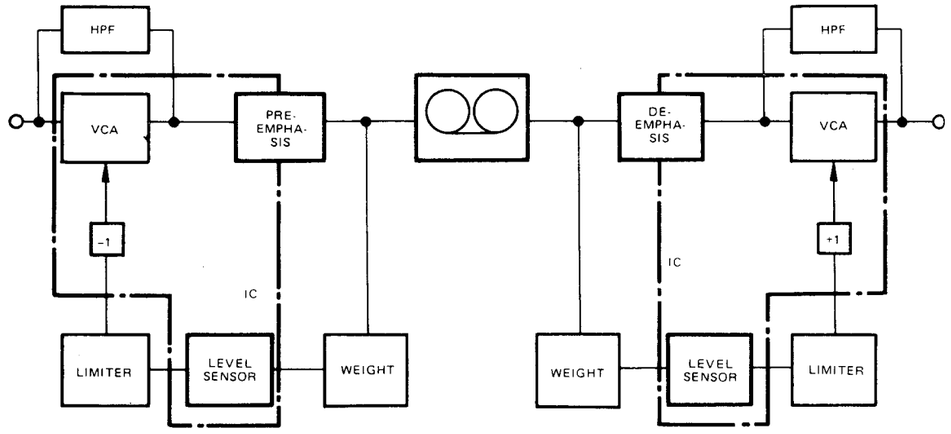


Figure 18

Input/Output Characteristics

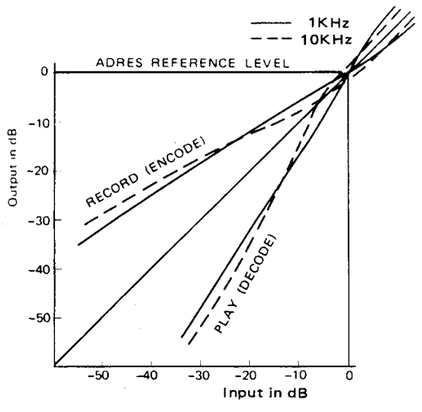


Figure 19

Typical ADRES Results

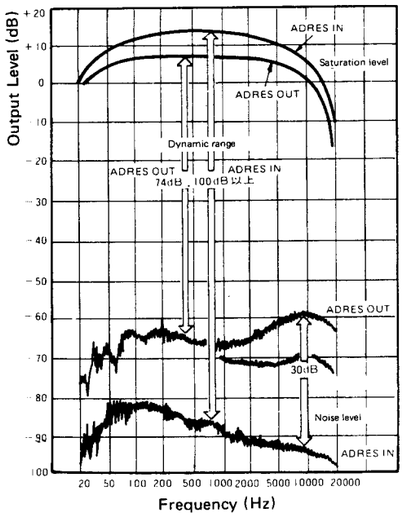


Figure 20

7. IC (TC9121P) TECHNICAL DATA

FUNCTIONS OF EACH TERMINALS

Pin No.	Terminal Symbol	Function
1	GND	Ground terminal.
2	REW	Tape rewind command signal input.
3	F.F.	Tape fast forward command signal input.
4	PLAY	Tape playback mode command signal input. Recording mode commenced when switched to "L" level together with the REC terminal.
5	REC	Tape recording mode command signal input. Effective only when switched to "L" level together with the PLAY terminal.
6	STOP	Tape transport stop command signal input.
7	PAUSE	Tape transport temporary stop and restart command signals input. Auto-set and reset type which is effective only during stop, play and recording modes.
8	A. REW	Input designating operational mode when "L" signal applied to Y or Z input during playback or recording mode. Tape transport stopped by above signal when terminal set to "H" level. Tape transport stopped temporarily, and then switched to rewind mode automatically when terminal set to "L" level. Note: If Z is switched to "L" level during fast forward mode, tape transport is stopped irrespective of the A. REW setting.
9	A. PLAY	Input designating operational mode when "L" signal is applied to the Z or X input during rewind mode. When terminal is switched to "H" level, tape transport is stopped by the above signal. When terminal is switched to "L" level, tape transport is stopped temporarily before being switched to playback mode automatically.
10	Y	Input terminal employed to designate either stop or playback mode (A. PLAY setting) during rewind mode. By connecting up to a memory equipped counter, tape transport may be switched to stop mode or playback mode at any desired position during rewind. The X input will only receive inputs during rewind mode.
11	X	Input terminal employed to designate either stop mode or rewind mode (A. REW setting) during playback and recording modes. By connecting up to a memory equipped counter, tape transport may be switched automatically from playback or recording mode to stop or rewind mode at any desired position. Note that the Y input is non-receptive in all other modes apart from playback and recording.
12	Z	Input terminal for signal detecting that tape transport has stopped. "H" level input pulses during transport, and "L" level input pulses when stopped. Controls transport mode when tape stops according to A. REW or A. PLAY settings.
13	OSC	CR determining the oscillator frequency of a single terminal oscillator connected to this terminal. The clock pulse signals generated by the oscillator are employed in determining operational timing within the LSI, and also in the prevention of chattering.
14	$\overline{\text{INH}}$	When this terminal is switched to "L" level during any tape transport mode, all outputs (except the $\overline{\text{O. MUT}}$ and TAPE END outputs) are blocked, resulting in the tape transport being switched to stop mode. This terminal is employed in setting the warm-up time when the deck is turned on by timer (timer playback and recording modes), and also in the auto-stop function for mechanical tape pretection when the power switch is turned off.
15	O. PLAY	"H" output in playback or recording mode.
16	O. REC	"H" output in recording or recording pause mode.

Pin No.	Terminal Symbol	Function
17	$\overline{\text{O. STOP}}$	"H" output in all modes except stop mode.
18	O. FF. REW	"H" output in fast forward or rewind mode.
19	O. PAUSE	"H" output in pause mode.
20	$\overline{\text{O. MUT}}$	"L" output in playback, recording, or pause mode. "H" output in all other modes.
21	O. REW	"H" output in rewind mode.
22	O. FF	"H" output in fast forward mode.
23	TAPE, END	"H" level output under normal conditions, but switched to "L" level when tape transport stop is detected by the Z input. Then when any other key is pressed, or the A. REW or A. PLAY mode is commenced, the terminal is returned to "H" level.
24	VDD	Power Supply voltage.

IC (TC9121P) BLOCK DIAGRAM

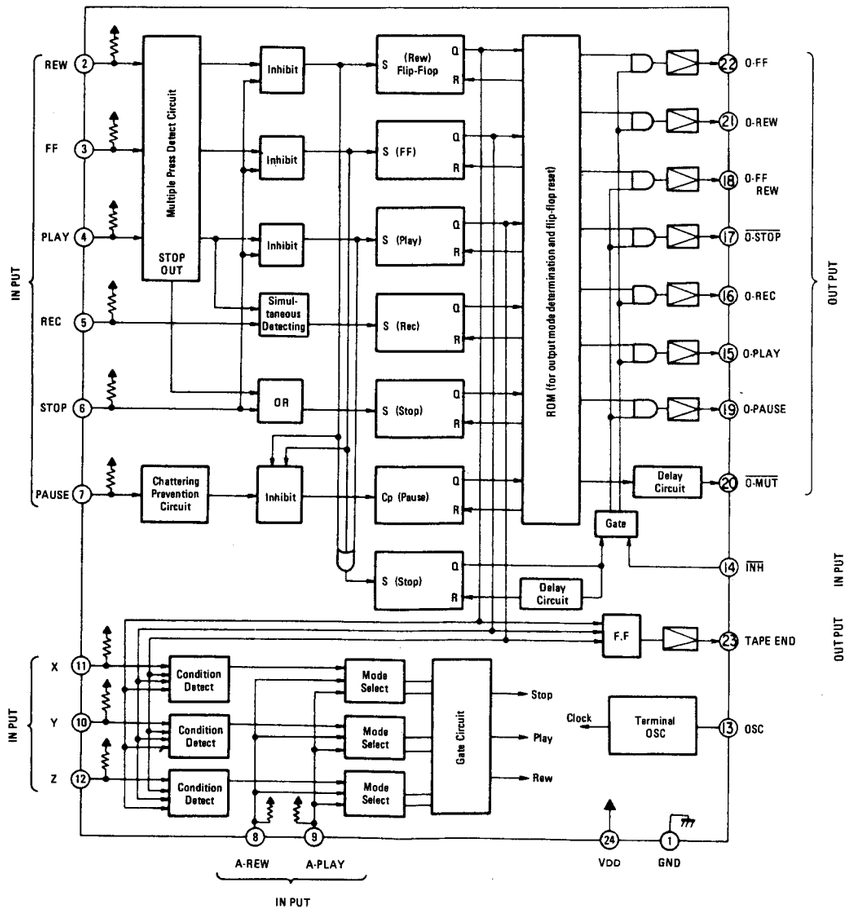


Figure 21

8-1. MAIN/ETC P.C. BOARD PARTS LOCATIONS

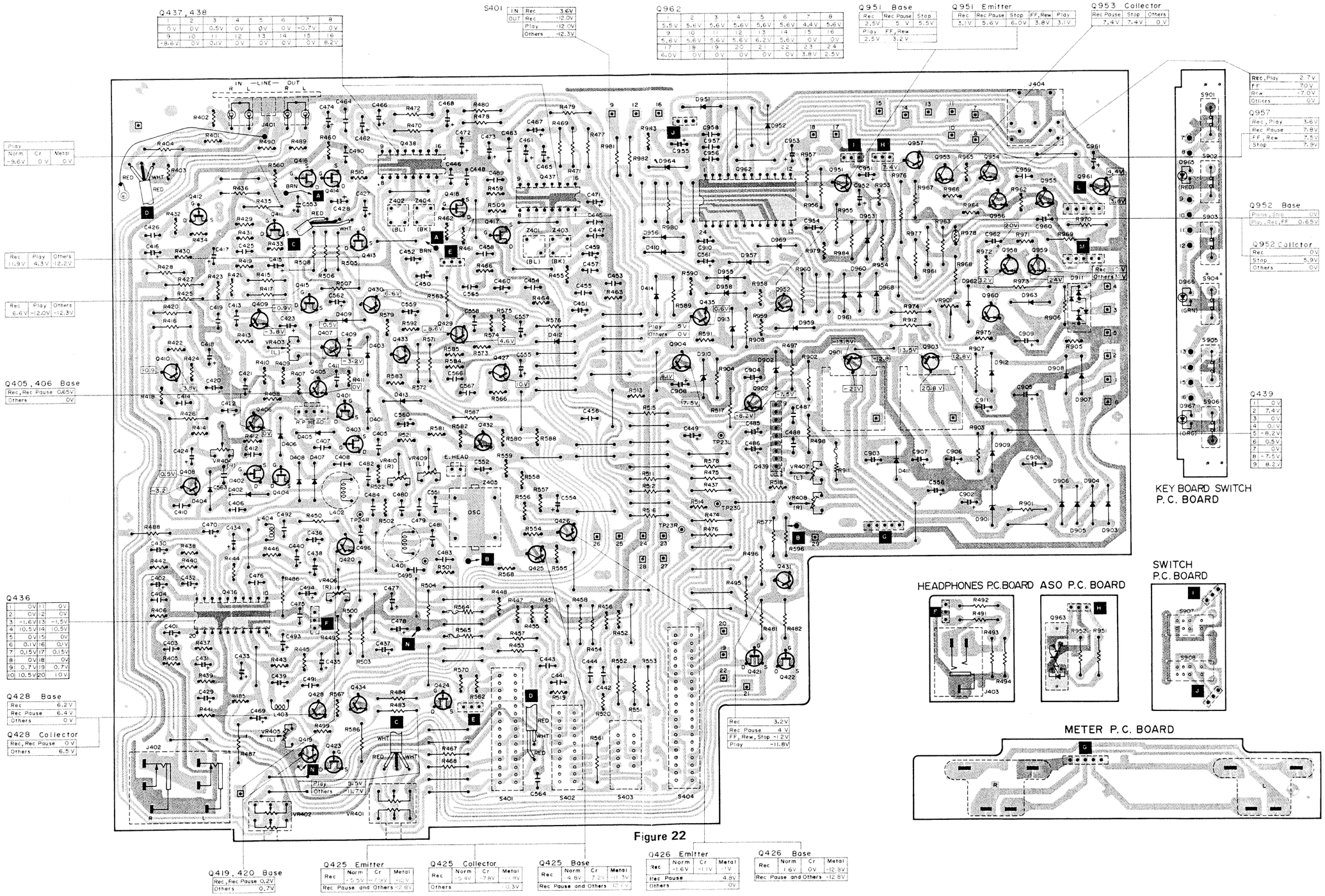
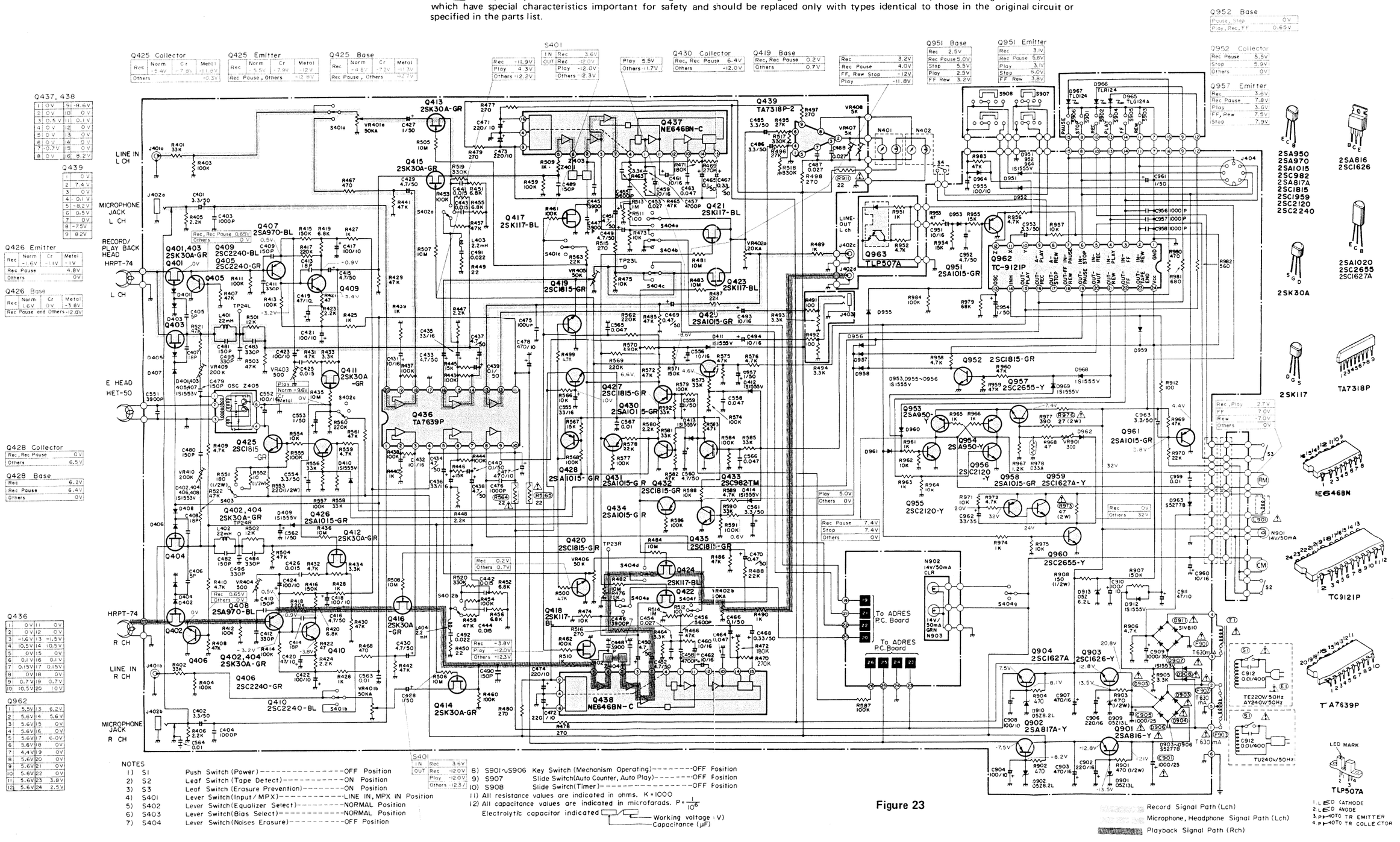


Figure 22

9-1. SCHEMATIC DIAGRAM (MAIN/ETC)

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.



NOTES

1) S1 Push Switch (Power)----------OFF Position
2) S2 Leaf Switch (Tape Detect)----------ON Position
3) S3 Leaf Switch (Erasure Prevention)----------ON Position
4) S401 Lever Switch (Input / MPX)----------LINE IN, MPX IN Position
5) S402 Lever Switch (Equalizer Select)----------NORMAL Position
6) S403 Lever Switch (Bias Select)----------NORMAL Position
7) S404 Lever Switch (Noises Erasure)----------OFF Position
8) S901∿S906 Key Switch (Mechanism Operating)----------OFF Fosition
9) S907 Slide Switch (Auto Counter, Auto Play)----------OFF Fosition
10) S908 Slide Switch (Timer)----------OFF Fosition
11) All resistance values are indicated in ohms. K=1000
12) All capacitance values are indicated in microfarads. $P=\frac{1}{10^6}$
Electrolytic capacitor indicated — Working voltage (V) / Capacitance (μF)

Figure 23

Record Signal Path (Lch)
Microphone, Headphone Signal Path (Lch)
Playback Signal Path (Rch)

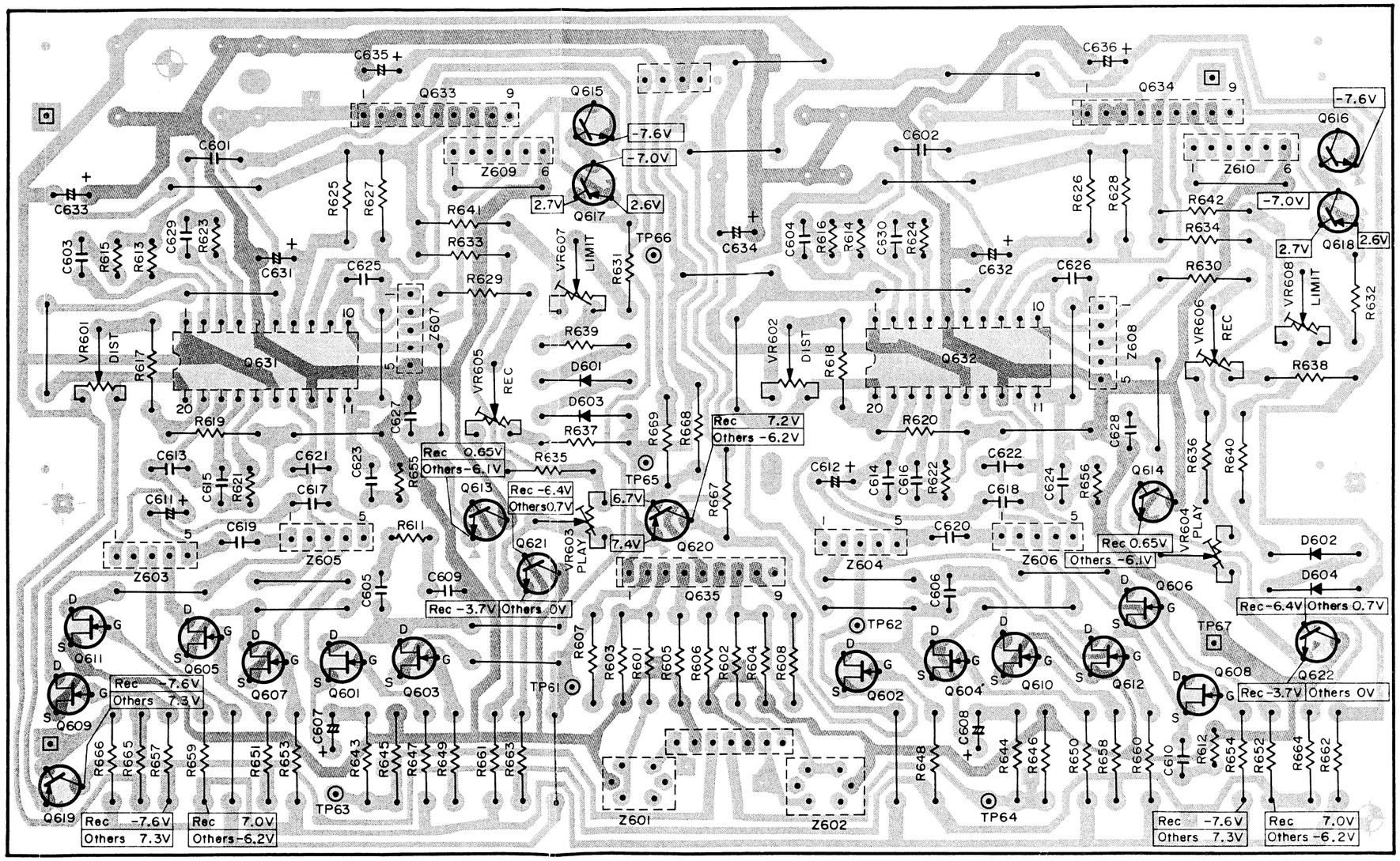
8-2. ADRES P.C. BOARD PARTS LOCATIONS

Q631, Q632

1	2	3	4	5	6	7	8	9	10
-7.6V	0.7V	2.4V	2V	0V	7.3V	1.55V	1V	0V	0V
11	12	13	14	15	16	17	18	19	20
0V	0.65V	0V	0.57V	-7.6V	1.35V	0.7V	0.6V	0V	7.3V

Q633, Q634

1	7.3V
2	Rec 0.6V, Others 0V
3	Rec 0.6V, Others 0V
4	0V
5	0V
6	0V
7	0.25V
8	4.7V
9	7.3V



1	2	3	4	5	6	7	8
7.2V	0V	0V	0V	-7.6V	0V	0V	7.4V

Q635

Figure 24

9-2. SCHEMATIC DIAGRAM (ADRES)

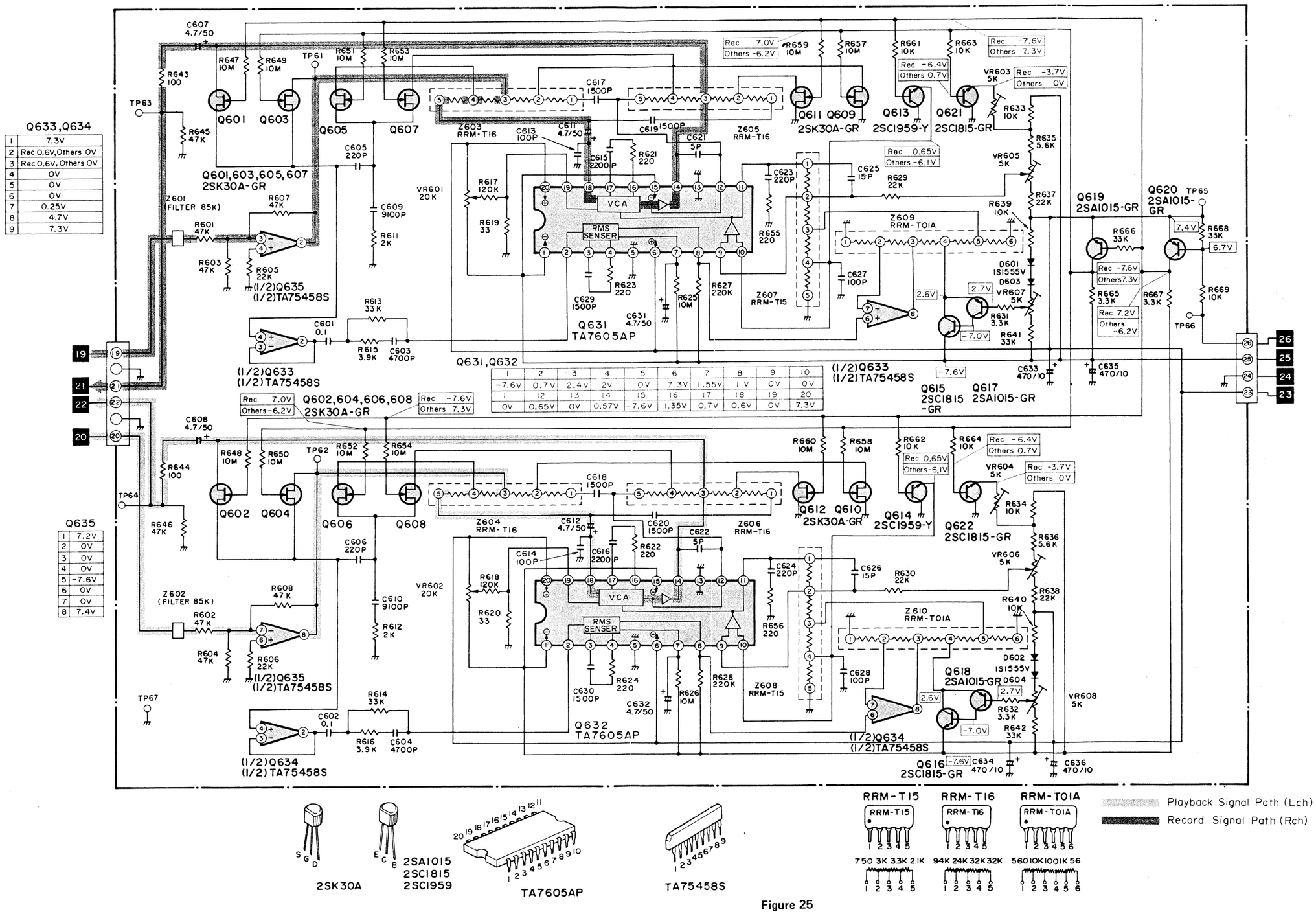


Figure 25

10. WIRING

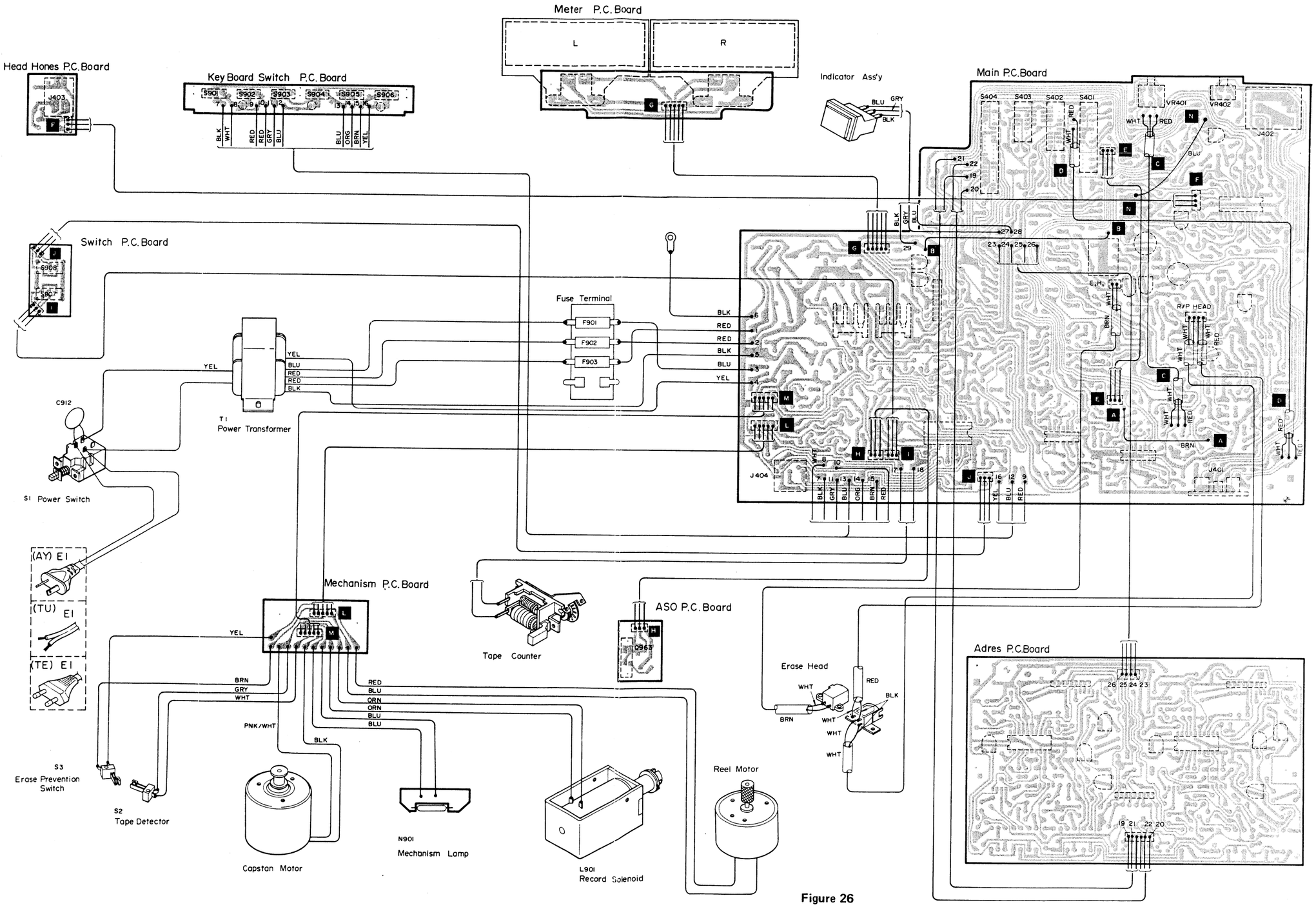


Figure 26

11. BLOCK DIAGRAM

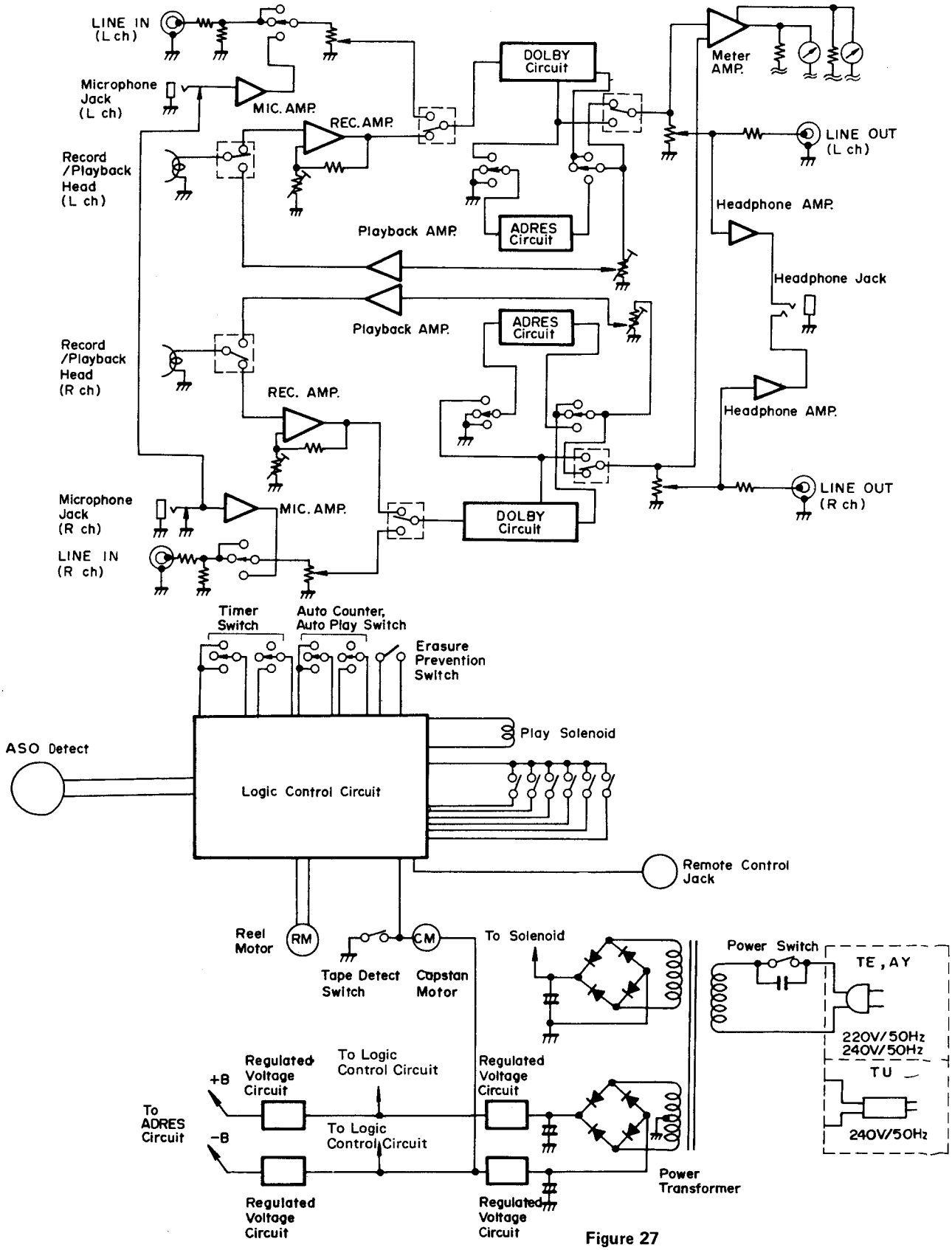
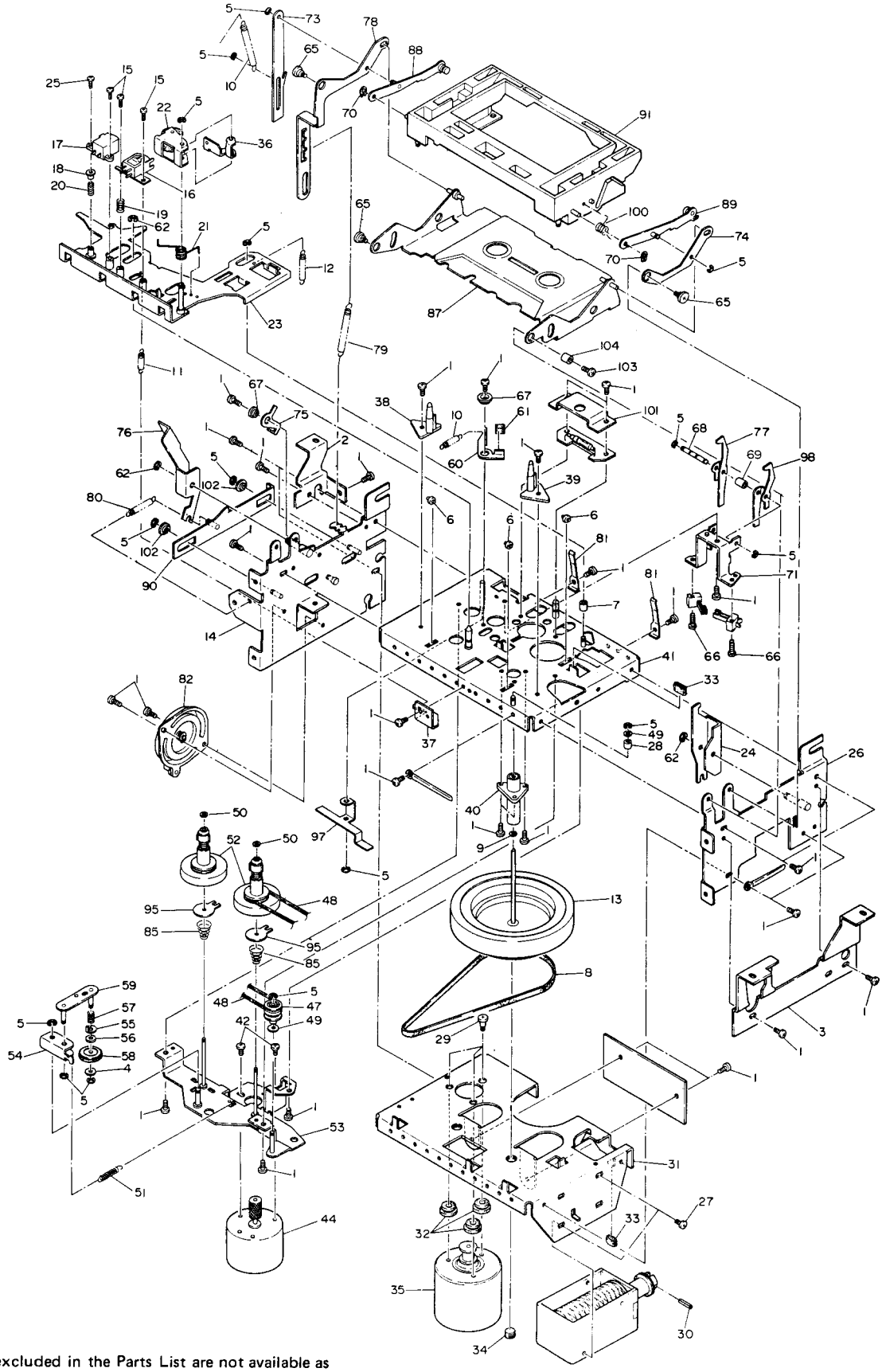


Figure 27

12. EXPLODED VIEW (MECHANISM)



NOTE: Parts excluded in the Parts List are not available as replacement parts.

Figure 28

13. EXPLODED VIEW (CABINET)

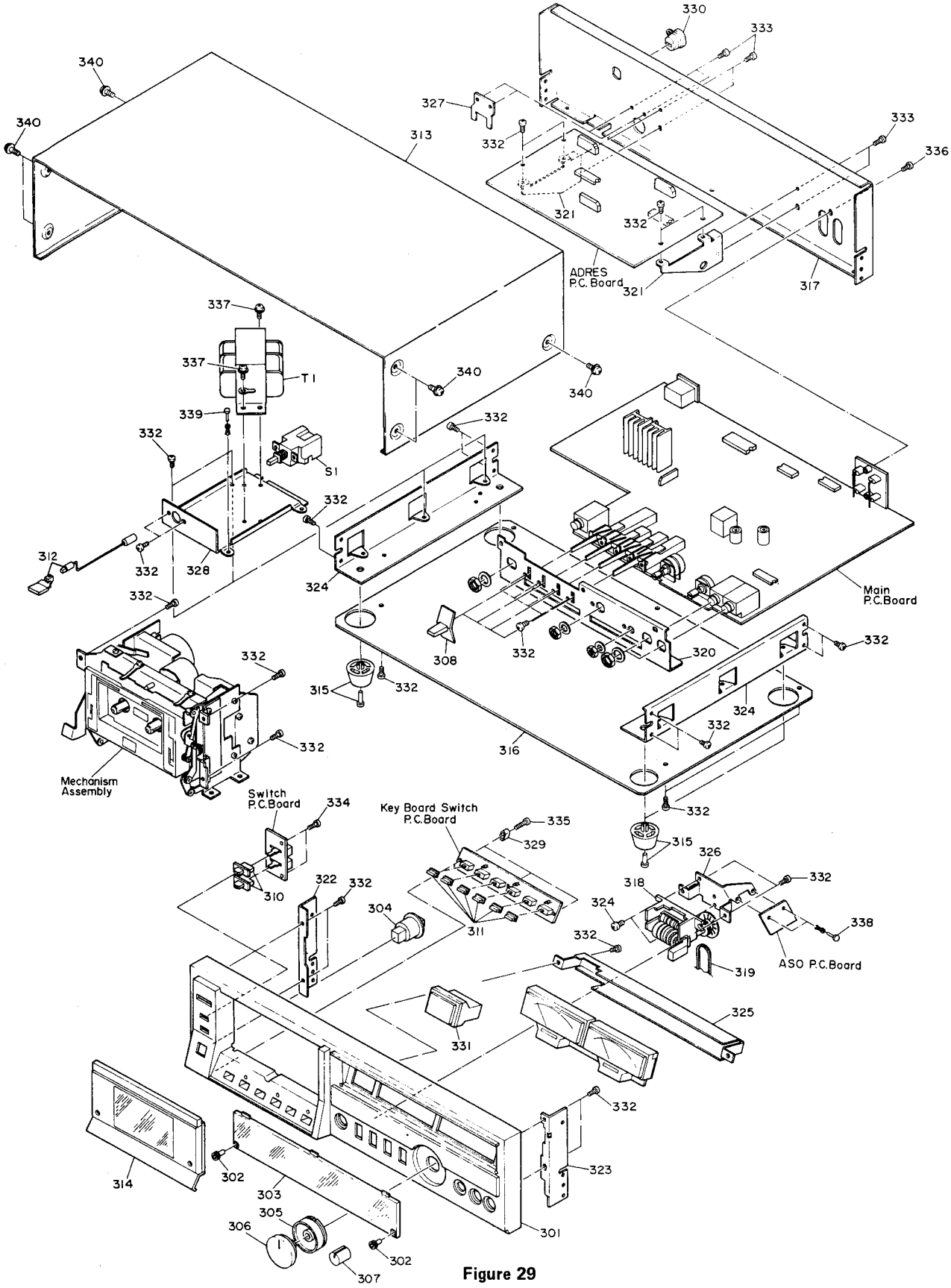


Figure 29

NOTE: Parts excluded in the Parts List are not available as replacement parts.

14. PARTS LIST

CAUTION:
The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
		MECHANICAL PARTS
1	22707350	Screw (DT BID), 2.6ϕ x 5mm
4	22703269	Washer, 3ϕ
5	22703118	E Ring, 2ϕ
6	25753325	Roller
7	25753347	Roller
8	25755448	Belt, Main
9	25764398	Washer, 2.5ϕ
10	25771898	Spring
11	25771704	Spring
12	25771951	Spring
13	25717439	Flywheel Ass'y
15	22707451	Screw (BID), 2ϕ x 5mm
16	22217352	Head, Record/Playback (HRPT-74)
17	22218223	Head, Erase (HET-50)
18	25726489	Sleeve, Erase Head
19	25772240	Spring, Head
20	25772438	Spring, Erase Head
21	25773469	Spring, Pressure Roller
22	25717422	Pressure Roller Ass'y
25	22707505	Screw (BID), 2ϕ x 6mm
27	22707452	Screw (BID), 3ϕ x 5mm
28	25753348	Roller
29	22707429	Spacer, Motor
30	25727251	Pin, Solenoid
32	25761238	Cushion
33	25761400	Stopper, Head Chassis
34	25783219	Screw, Thrust
35	25791167	Motor, Ass'y, Main
38	25783222	Guide, Left
39	25783223	Guide, Right
40	25718158	Holder, Capstan
42	22701389	Screw (BID), 2.6ϕ x 3mm
44	25791142	Motor Ass'y, Reel
47	25758046	Pulley, Center
48	25755442	Belt, Counter
49	25764400	Washer, 3ϕ
50	25764549	Washer, 1.7ϕ
51	25771586	Spring
52	25712360	Drum Ass'y, Reel
56	25762401	Washer, Felt
57	25772572	Spring, FF Idler
58	25713372	Idler Ass'y, FF
61	25762384	Felt, Friction
62	22703279	E Ring, 3ϕ
65	22701472	Screw (FLT), 2.6ϕ x 13mm
66	22707169	Screw (BID), 2.6ϕ x 10mm
67	25724420	Bushing
69	25724833	Roller
70	25735197	G Washer
79	25776177	Spring
80	25776166	Spring
82	25791074	Damper Ass'y
85	25772254	Spring, Back Tension
87	25791095	Cover Ass'y, Mechanism
91	25817680	Holder Ass'y
95	25764580	Washer, Back Tension
103	22707151	Screw (BID), 2.6ϕ x 5mm
		CABINET PARTS
301	25817750	Panel Ass'y
302	22707514	Screw, Special, 3ϕ x 4mm
303	25828399	Cover, Meter
304	25816590	Knob, Eject
305	25837318	Knob, Level, Left
306	25837319	Knob, Level, Right
307	25837320	Knob, OUTPUT Control
308	25837361	Knob, Selector
310	25837432	Knob, Memory/Timmer
311	25837323	Knob, Operation, Mechanism
312	25816599	Knob Ass'y
313	25838247	Cover, Top
314	25817748	Cover Ass'y, Cassette
315	22828048	Leg
317	25838373	Plate, Jack (TE)
317	25838374	Plate, Jack (TU, AY)
318	25873218	Tape Counter
319	25755226	Belt, Counter
329	25854386	Spacer
330	25845528	Bushing, Power Cord
331	22113497	Indicator Ass'y
332	22707445	Screw (DTBID), 3ϕ x 6mm
333	22707446	Screw (DTBID), 3ϕ x 6mm (BLK)
334	22707366	Screw (DTBID), 2.6ϕ x 6mm
335	22707369	Screw (DTBID), 2.6ϕ x 12mm (BLK)
336	22701326	Screw (BID), Tapping, 3ϕ x 8mm (BLK)
337	22707521	Screw, 3ϕ x 6mm (BLK)
338	22705030	Rivet, 3ϕ x 8mm
339	22705022	Rivet, 3ϕ x 5.5mm
340	22707522	Screw, 3ϕ x 6mm

Symbol No.	Part No.	Description
TRANSISTORS, DIODES AND ICS		
Q401, 402		Transistor, 2SK30A-GR
Q403, 404		Transistor, 2SK30A-GR
Q405, 406		Transistor, 2SC2240-GR
Q407, 408		Transistor, 2SA970-BL
Q409, 410		Transistor, 2SC2240-BL
Q411, 412		Transistor, 2SK30A-GR
Q413, 414		Transistor, 2SK30A-GR
Q415, 416		Transistor, 2SK30A-GR
Q417, 418		Transistor, 2SK117-BL
Q419, 420		Transistor, 2SC1815-GR
Q421, 422		Transistor, 2SK117-BL
Q423, 424		Transistor, 2SK117-BL
Q425		Transistor, 2SC1815-GR
Q426		Transistor, 2SA1015-GR
Q427		Transistor, 2SC1815-GR
Q428		Transistor, 2SA1015-GR
Q429		Transistor, 2SA1015-GR
Q430		Transistor, 2SA1015-GR
Q431		Transistor, 2SA1015-GR
Q432		Transistor, 2SC1815-GR
Q433		Transistor, 2SC982-TM
Q434		Transistor, 2SA1015-GR
Q435		Transistor, 2SC1815-GR
Q436		IC, TA7639P
Q437, 438	22114681	IC, NE646BN-C
Q439		IC, TA7318P-2
Q601, 602		Transistor, 2SK30A-GR
603, 604		
605, 606		
607, 608		
609, 610		
611, 612		
Q613, 614		Transistor, 2SC1959-Y
Q615, 616		Transistor, 2SC1815-GR
Q617, 618		Transistor, 2SA1015-GR
Q619, 620		Transistor, 2SA1015-GR
Q621, 622		Transistor, 2SC1815-GR
Q631, 632		IC, TA7605AP
Q633, 634		IC, TA75458S
Q635		IC, TA75458S
Q901		Transistor, 2SA816-Y
Q902		Transistor, 2SA817-Y
Q903		Transistor, 2SC1626-Y
Q904		Transistor, 2SC1627A-Y
Q951		Transistor, 2SA1015-GR
Q952		Transistor, 2SC1815-GR
Q953, 954		Transistor, 2SA950-Y
Q955, 956		Transistor, 2SC2120-Y
Q957		Transistor, 2SC2655-Y
Q957		Transistor, 2SA1015-GR
Q959		Transistor, 2SC1627A-Y

Symbol No.	Part No.	Description
Q960		Transistor, 2SC2655-Y
Q961		Transistor, 2SA1015-GR
Q962		IC, TC9121P
Q963		IC, TLP507A
D401, 402		Diode, 1S1553V
403, 404		
405, 406		
407, 408		
D409, 410		Diode, 1S1555V
411, 412		
413, 414		
D601, 602		Diode, 1S1555V
603, 604		
D901, 909		Diode, 05Z13L
D902, 910		Diode, 05Z8.2L
⚠ D903, 904		Diode, S5277B
⚠ D905, 906		Diode, S5277B
⚠ D907, 908		Diode, 1S1553V
⚠ D911	22115571	Diode, SIVB10
D912		Diode, 1S1555V
D913		Diode, 05Z6.2L
D951, 952		Diode, 1S1555V
D953, 955		Diode, 1S1555V
D956, 957		Diode, 1S1555V
958, 959		
960, 961		
962		
D963		Diode, S5277B
D964		Diode, 1S1555V
D965		Diode, TLG124A
D966		Diode, TLR124
D967		Diode, TL0124
D968, 969		Diode, 1S1555V
ELECTRICAL PARTS		
⚠ T1	22223779	Transformer, Power (TE)
⚠ T1	22223787	Transformer, Power (TU, AY)
⚠ S1	22146295	Push Switch, Power
S2	22195199	Switch, Leaf, Cassette
S3	22195199	Switch, Leaf

Symbol No.	Part No.	Description
S401	22195474	Switch, Lever, INPUT Selector
S402	22195362	Switch, Lever, Tape Selector (EQ)
S403	22195361	Switch, Lever, Tape Selector (BIAS)
S404	22195475	Switch, Lever, Noise Reduction
S901 ∿ 906	22195472	Switch, Key
S907, 908	22195566	Switch, Slide, Memory/Timer
L401, 402	22232203	Coil, 22mH
L403, 404	22232207	Coil, 2.2mH
⚠ L901	22147208	Solenoid, Recording
Z401, 402	22153116	Filter, Dolby, Bias
Z403, 404	22153117	Filter, Dolby, MPX
Z405	22132530	Unit, Bias Oscillator
Z601, 602	22153116	Filter, Dolby
Z603, 604	22134127	Composite Parts, Resistor
Z605, 605	22134127	Composite Parts, Resistor
Z607, 608	22134126	Composite Parts, Resistor
Z609, 610	22134124	Composite Parts, Resistor
F901, 902	22144432	Fuse, T 630mA/250V
F903		
J401	22163759	Jack, US 4P
J402	22163782	Jack, Microphone, 2P
J403	22163776	Jack, Headphone
J404	22167893	Jack, DIN, Remote Control
N401, 402	22104514	Meter, Level
	22113496	Lamp, 70mA/6.3V, For Level Meter
N901	22113484	Lamp, 50mA/14V, Mechanism
⚠ E1	22176286	Cord, Power (TE)
⚠ E1	22176536	Cord, Power (TU)
⚠ E1	22176588	Cord, Power (AY)

CAPACITORS

D = ±0.5%, G = ±2%, J = ±5%, K = ±10%, M = ±20%,
P = –0+100%, Z = –20 +80%
ABBREVIATIONS: EL = Electrolytic, CD = Ceramic Disk
MY = Mylar, PS = Polystyrene
PP = Polypropylene

C401, 402	22488339	EL, 3.3mfd, 50V
C403, 404	22349102	CD, 1000pF, 50V, K
C405, 406	22361509	CD, 5pF, 50V, D
C407, 408	22362180	CD, 18pF, 50V, K
C409, 410	22349151	CD, 150pF, 50V, K
C411, 412	22349331	CD, 330pF, 50V, K
C413, 414	22362180	CD, 18pF, 50V, K
C415, 416	22488479	EL, 4.7mfd, 50V
C417, 418	22483101	EL, 100mfd, 10V
C419, 420	22483470	EL, 47mfd, 10V
C421, 422	22483101	EL, 100mfd, 10V
C423, 424		
C425, 426	22371153	MY, 0.015mfd, 50V, J
C427, 428	22488109	EL, 1mfd, 50V
C429, 430	22488479	EL, 4.7mfd, 50V
C431, 432	22485100	EL, 10mfd, 16V
C433, 434	22488479	EL, 4.7mfd, 50V
C435, 436	22485330	EL, 33mfd, 16V
C437, 438	22488479	EL, 4.7mfd, 50V
C439, 440	22480003	EL, 0.1mfd, 50V
C441, 442	22371153	MY, 0.015mfd, 50V, J
C443, 444	22371153	MY, 0.015mfd, 50V, J
C445, 446	22371392	MY, 3900pF, 50V, J
C447, 448	22371392	MY, 3900pF, 50V, J
C449, 450	22488479	EL, 4.7mfd, 50V
C451, 452	32488479	EL, 4.7mfd, 50V
C453, 454	22371273	MY, 0.027mfd, 50V, J
C455, 456	22371562	MY, 5600pF, 50V, J
C457, 458	22371472	MY, 4700pF, 50V, J
C459, 460	22485100	EL, 10mfd, 16V
C461, 462	22485100	EL, 10mfd, 16V
C463, 464	22360331	CD, 0.047mfd, 25V, M
C465, 466	22480003	EL, 0.1mfd, 50V
C467, 468	22480006	EL, 0.33mfd, 50V, K
C469, 470	22488478	EL, 0.47mfd, 50V
C471, 472	22483221	EL, 220mfd, 10V
C473, 474	22483221	EL, 220mfd, 10V
C475, 476	22349102	CD, 1000pF, 50V, J
C477, 478	22483471	EL, 470mfd, 10V
C479, 480	22349151	CD, 150pF, 50V, K
C481, 482	22349151	CD, 150pF, 50V, K
C483, 484	22349331	CD, 330pF, 50V, K
C485, 486	22488339	EL, 3.3mfd, 50V
C487, 488	22371273	MY, 0.027mfd, 50V, J
C489, 490	22349151	CD, 150pF, 50V, K
C491, 492	22371223	MY, 0.022mfd, 50V, K
C493, 494	22485100	EL, 10mfd, 16V
C495, 496	22362331	CD, 330pF, 50V, K
C551	22380101	PS, 3900pF, 200V, K
C552	22485101	EL, 100mfd, 16V
C553	22488109	EL, 1mfd, 50V
C554	22488339	EL, 3.3mfd, 50V
C555	22485330	EL, 33mfd, 16V
C556	22485100	EL, 10mfd, 16V
C557	22488109	EL, 1mfd, 50V
C558	22360331	CD, 0.047mfd, 25V, M
C559	22488109	EL, 1mfd, 50V
C560	22488479	EL, 4.7mfd, 50V
C561	22488339	EL, 3.3mfd, 50V
C562	22488109	EL, 1mfd, 50V
C563	22343103	CD, 0.01mfd, 50V, M

Symbol No.	Part No.	Description
C564	22342103	CD, 0.01mfd, 50V, Z
C565	22360331	CD, 0.047mfd, 25V, M
C566	22360331	CD, 0.047mfd, 25V, M
C567	22342103	CD, 0.01mfd, 50V, Z
C601, 602	22372104	MY, 0.1mfd, 50V, K
C603, 604	22321157	PP, 4700pF, 100V, G
C605, 606	22380120	PS, 220pF, 125V, G
C607, 608	22488479	EL, 4.7mfd, 50V
C609, 610	22321181	PP, 9100pF, 100V, G
C611, 612	22488479	EL, 4.7mfd, 50V
C613, 614	22362101	CD, 100pF, 50V, K
C615, 616	22349222	CD, 2200pF, 50V, K
C617, 618	22321094	PP, 1500pF, 100V, G
C619, 620	22321094	PP, 1500pF, 100V, G
C621, 622	22361509	CD, 5pF, 50V, D
C623, 624	22349221	CD, 220pF, 50V, K
C625, 626	22362150	CD, 15pF, 50V, K
C627, 628	22362101	CD, 100pF, 50V, K
C629, 630	22349152	CD, 1500pF, 50V, K
C631, 632	22488479	EL, 4.7mfd, 50V
C633, 634	22483471	EL, 470mfd, 10V
C635, 636	22483471	EL, 470mfd, 10V
⚠ C901	22486102	EL, 1000mfd, 25V
C902	22485221	EL, 220mfd, 16V
C903	22485471	EL, 470mfd, 16V
C904	22483101	EL, 100mfd, 10V
⚠ C905	22486102	EL, 1000mfd, 25V
C906	22485221	EL, 220mfd, 16V
C907	22485471	EL, 470mfd, 16V
C908	22483101	EL, 100mfd, 10V
C909	22487102	EL, 1000mfd, 35V
C910	22483101	EL, 100mfd, 10V
C911	22483470	EL, 47mfd, 10V
⚠ C912	22340147	CD, 0.01mfd, AC400V, P
C951	22485100	EL, 10mfd, 16V
C952	22488479	EL, 4.7mfd, 50V
C953	22488339	EL, 3.3mfd, 50V
C954	22488109	EL, 1mfd, 50V
C955	22483101	EL, 100mfd, 10V
C956	22349102	CD, 1000pF, 50V, K
C957	22349102	CD, 1000pF, 50V, K
C958	22349102	CD, 1000pF, 50V, K
C959	22342103	CD, 0.01mfd, 50V, Z
C960	22485100	EL, 10mfd, 16V
C961	22488109	EL, 1mfd, 50V
C962	22487330	EL, 33mfd, 35V
C963	22488339	EL, 3.3mfd, 50V

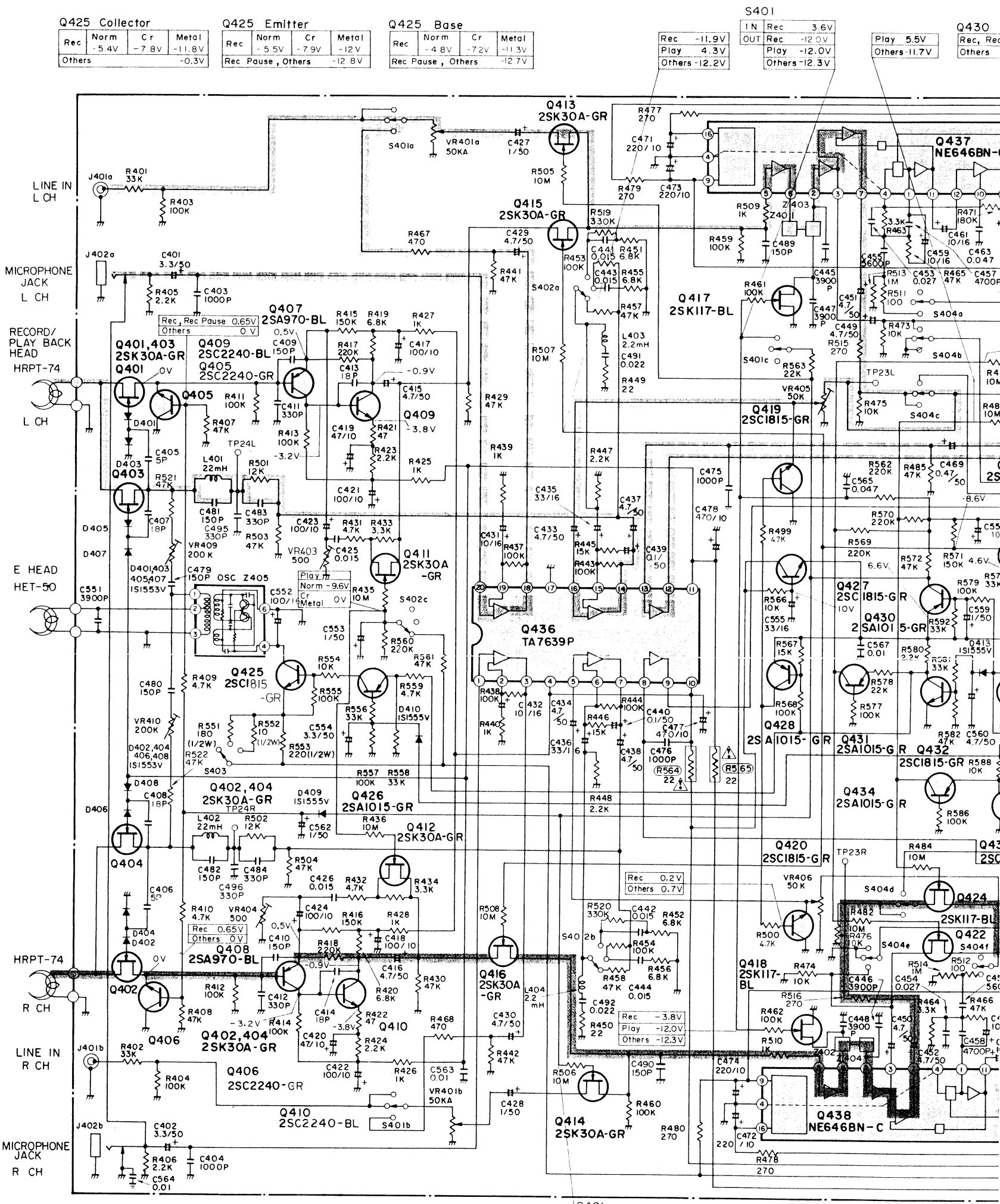
Symbol No.	Part No.	Description
		RESISTORS
		All resistors are carbon film ¼W, ±5%, unless otherwise noted. G = ±2%
R401, 402	22555333	33k ohm
R403, 404	22545104	100k ohm
R405, 406	22555222	2.2k ohm
R407, 408	22555473	47k ohm
R409, 410	22555472	4.7k ohm
R411, 412	22555104	100k ohm
R413, 414	22555104	100k ohm
R415, 416	22545154	150k ohm
R417, 418	22545224	220k ohm
R419, 420	22555682	6.8k ohm
R421, 422	22555470	47 ohm
R423, 424	22555222	2.2k ohm
R425, 426	22545102	1k ohm
R427, 428	22545102	1k ohm
R429, 430	22555473	47k ohm
R431, 432	22555472	4.7k ohm
R433, 434	22555332	3.3k ohm
R435, 436	22545106	10M ohm
R437, 438	22555104	100k ohm
R439, 440	22555102	1k ohm
R441, 442	22555473	47k ohm
R443, 444	22555104	100k ohm
R445, 446	22555153	15k ohm
R447, 448	22545222	2.2k ohm
R449, 450	22545220	22 ohm
R451, 452	22555682	6.8k ohm
R453, 454	22545104	100k ohm
R455, 456	22555682	6.8k ohm
R457, 458	22545473	47k ohm
R459, 460	22555104	100k ohm
R461, 462	22555104	100k ohm
R463, 464	22555332	3.3k ohm
R465, 466	22555473	47k ohm
R467, 468	22545471	470 ohm
R469, 470	22545274	270k ohm
R471, 472	22545184	180k ohm
R473, 474	22545103	10k ohm
R475, 476	22545103	10k ohm
R477, 478	22545271	270 ohm
R479, 480	22545271	270 ohm
R481, 482	22545106	10M ohm
R483, 484	22545106	10M ohm
R485, 486	22545473	47k ohm
R487, 488	22545223	22k ohm
R489, 490	22555102	1k ohm
R491, 492	22545101	100 ohm
R493, 494	22545332	3.3k ohm
R495, 496	22545273	27k ohm
R497, 498	22545271	270 ohm

Symbol No.	Part No.	Description
R499, 500	22555472	4.7k ohm
R501, 502	22555123	12k ohm
R503, 504	22545473	47k ohm
R505, 506	22545106	10M ohm
R507, 508	22545106	10M ohm
R509, 510	22555102	1k ohm
R511, 512	22545101	100 ohm
R513, 514	22555105	1M ohm
R515, 516	22545271	270 ohm
R517, 518	22555334	330k ohm
R519, 520	22555334	330k ohm
R521, 522	22555473	47k ohm
R551	22547181	180 ohm, ½W
R552	22547100	10 ohm, ½W
R553	22547221	220 ohm, ½W
R554	22555103	10k ohm
R555	22555104	100k ohm
R556	22555333	33k ohm
R557	22555104	100k ohm
R558	22555333	33k ohm
R559	22555472	4.7k ohm
R560	22555224	220k ohm
R561	22545473	47k ohm
R562	22555224	220k ohm
R563	22545223	22k ohm
⚠ R564	22500176	22 ohm, Fusible
⚠ R565	22500176	22 ohm, Fusible
R566	22555103	10k ohm
R567	22555153	15k ohm
R568	22555104	100k ohm
R569	22545224	220k ohm
R570	22555224	220k ohm
R571	22545154	150k ohm
R572	22545473	47k ohm
R573	22555333	33k ohm
R574	22555104	100k ohm
R575	22555473	47k ohm
R576	22545472	4.7k ohm
R577	22545104	100k ohm
R578	22545223	22k ohm
R579	22555104	100k ohm
R580	22555222	2.2k ohm
R581	22555333	33k ohm
R582	22555473	47k ohm
R583	22555472	4.7k ohm
R584	22555104	100k ohm
R585	22555333	33k ohm
R586	22545104	100k ohm
R587	22545104	100k ohm
R588	22555103	10k ohm
R589	22545472	4.7k ohm
R590	22555333	33k ohm
R591	22555104	100k ohm

Symbol No.	Part No.	Description
R592	22555333	33k ohm
R601, 602	22545473	47k ohm
R603, 604	22545473	47k ohm
R605, 606	22545223	22k ohm
R607, 608	22545473	47k ohm
R611, 612	22550235	2k ohm G
R613, 614	22550144	33k ohm, G
R615, 616	22550229	3.9k ohm, G
R617, 618	22545124	120k ohm
R619, 620	22545330	33 ohm
R621, 622	22555221	220 ohm
R623, 624	22555221	220 ohm
R625, 626	22545106	10M ohm
R627, 628	22545224	220k ohm
R629, 630	22545223	22k ohm
R631, 632	22545332	3.3k ohm
R633, 634	22545103	10k ohm
R635, 636	22545562	5.6k ohm
R637, 638	22545223	22k ohm
R639, 640	22545103	10k ohm
R641, 642	22545333	33k ohm
R643, 644	22545101	100 ohm
R645, 646	22545473	47k ohm
R647, 648	22545106	10M ohm
R649, 650	22545106	10M ohm
R651, 652	22545106	10M ohm
R653, 654	22545106	10M ohm
R655, 656	22555221	220 ohm
R657, 658	22545106	10M ohm
R659, 660	22545106	10M ohm
R661, 662	22545103	10K ohm
R663, 664	22545103	10k ohm
R665, 667	22545332	3.3k ohm
R666, 668	22545333	33k ohm
R669	22545103	10k ohm
R901	22547471	470 ohm, ½W
R902	22545471	470 ohm
R903	22547471	470 ohm, ½W
R904	22545471	470 ohm
R905	22555332	3.3k ohm
R906	22545472	4.7k ohm
R907	22545154	150k ohm
R908	22547151	150 ohm, ½W
⚠ R911	22500176	22 ohm, Fusible
R912	22545101	100 ohm
R951	22545102	1k ohm
R952	22545472	4.7k ohm
R953	22555470	47 ohm
R954	22545153	15k ohm
R955	22545153	15k ohm
R956	22545472	4.7k ohm
R957	22545103	10k ohm
R958	22545472	4.7k ohm

■ SCHEMATIC DI

CAUTION:
The ⚠ mark, the symbol No. circlued with rectangl
designate components which have special characteristic
identical to those in the orignal circuit or specified in the



NOTES

1) S1 Push Switch (Power)---OFF Position
2) S2 Leaf Switch (Tape Detect)---ON Position
3) S3 Leaf Switch (Erasure Prevention)---ON Position
4) S401 Lever Switch (Input / MPX)---LINE IN, MPX IN Position
5) S402 Lever Switch (Equalizer Select)---NORMAL Position
6) S403 Lever Switch (Bias Select)---NORMAL Position
7) S404 Lever Switch (Noises Erasure)---OFF Position
8) S901~S906 Key Switch (Mechanism Operating)---OFF Position
9) S907 Slide Switch (Auto Counter, Auto Play)---OFF Position
10) S908 Slide Switch (Timer)---OFF Position
11) All resistance values are indicated in ohms. K=1000
12) All capacitance values are indicated in microfarads. $P=\frac{1}{10^6}$

Electrolytic capacitor indicated: Working voltage (V) / Capacitance (μF)

2SA950
2SA970
2SA1015
2SC982
2SA817A
2SC1815
2SC1959
2SC2120
2SC2240

2SA816
2SC1626

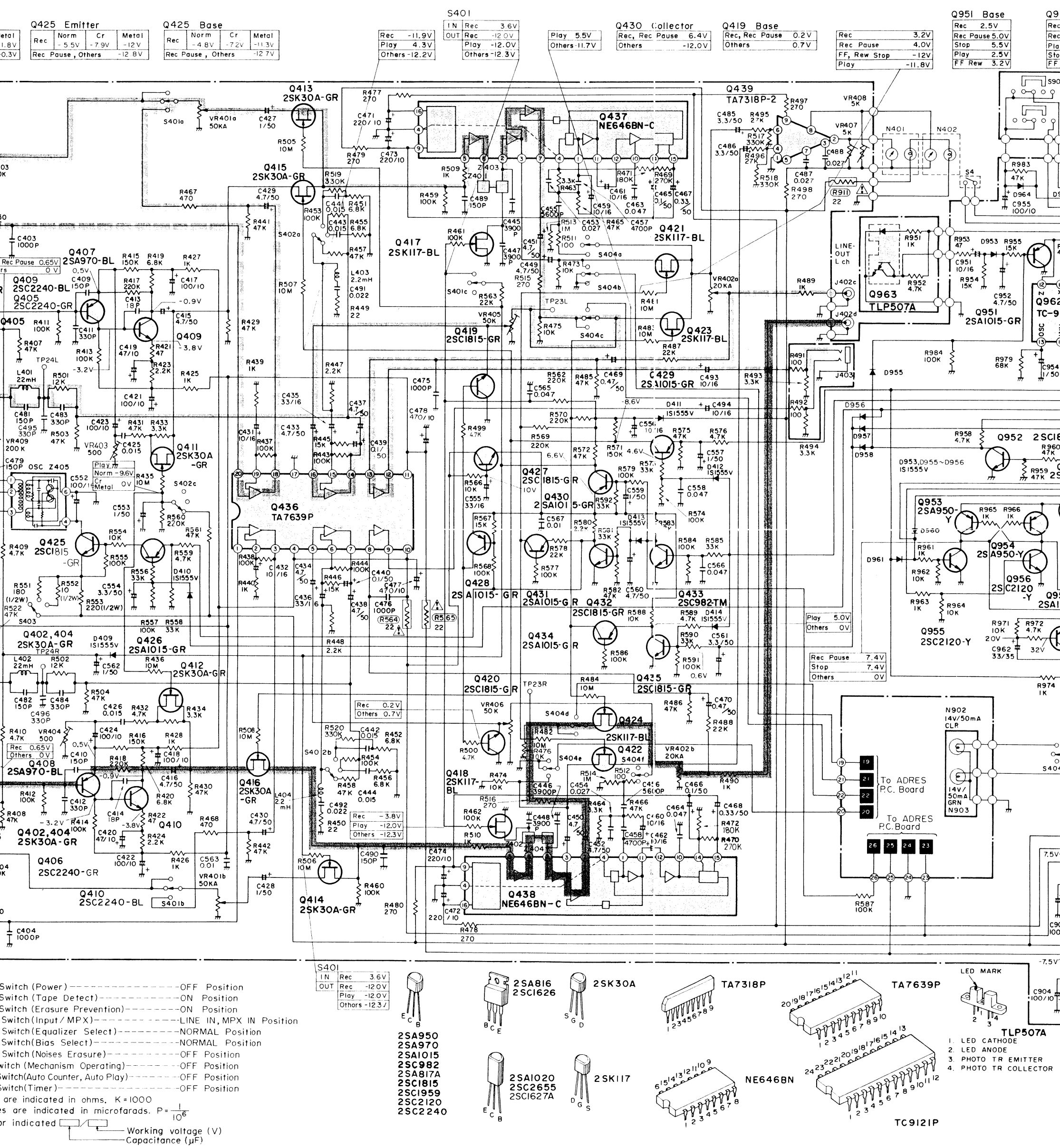
2SK30A

2SA1020
2SC2655
2SC1627A

2SK117

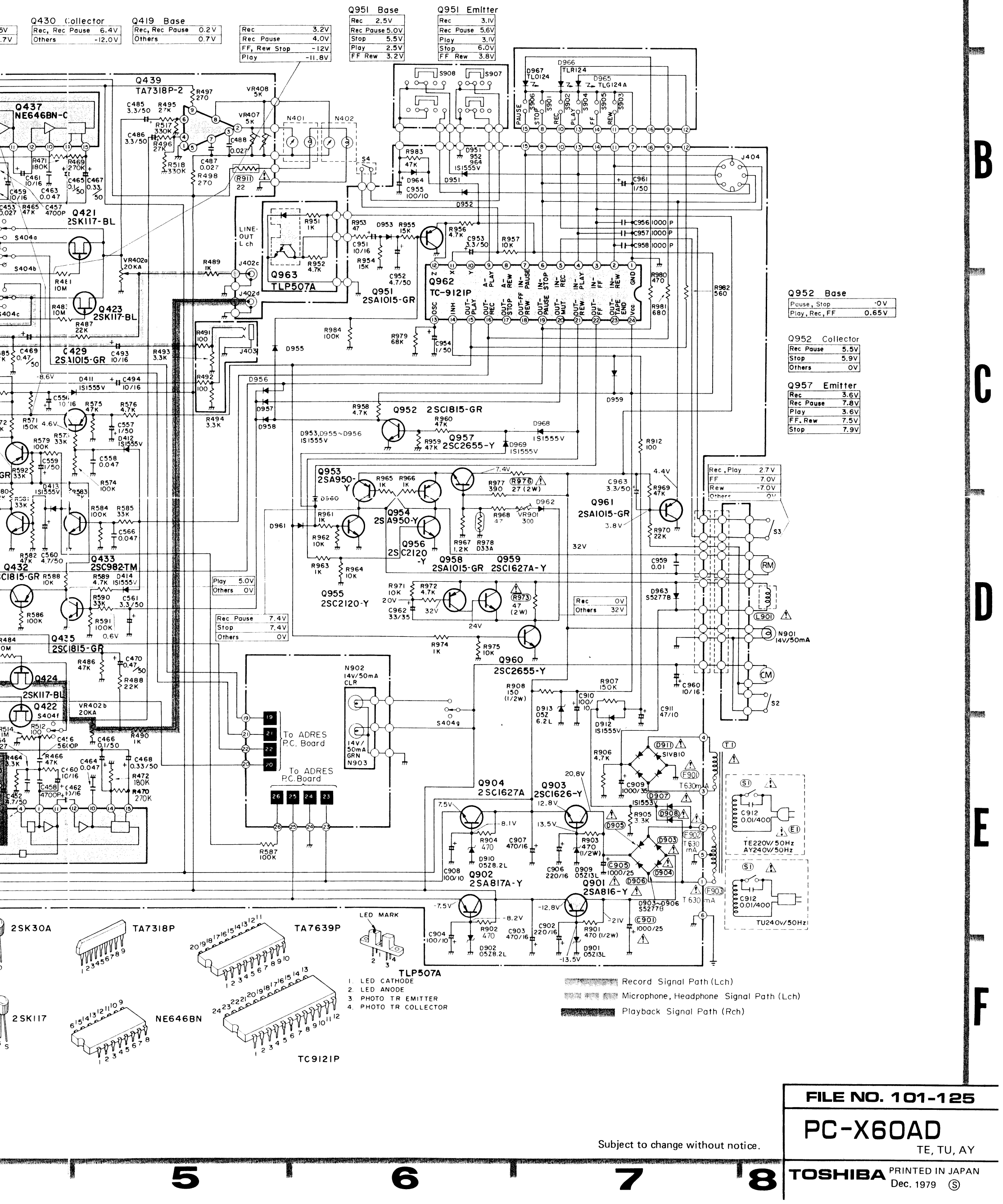
■ SCHEMATIC DIAGRAM (MAIN/ETC)

CAUTION:
The ⚠ mark, the symbol No. circlued with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the orignal circuit or specified in the parts list.



TIC DIAGRAM (MAIN/ETC)

ith rectangle in the schematic diagram and the shaded area in the parts list
haracteristics important for safety and should be replaced only with types
cified in the parts list.



Subject to change without notice.

FILE NO. 101-125

PC-X60AD

TE, TU, AY

TOSHIBA PRINTED IN JAPAN
Dec. 1979 Ⓢ

SCHEMATIC DIAGRA

Q633,Q634

1	7.3V
2	Rec 0.6V,Others 0V
3	Rec 0.6V, Others 0V
4	0V
5	0V
6	0V
7	0.25V
8	4.7V
9	7.3V

Q635

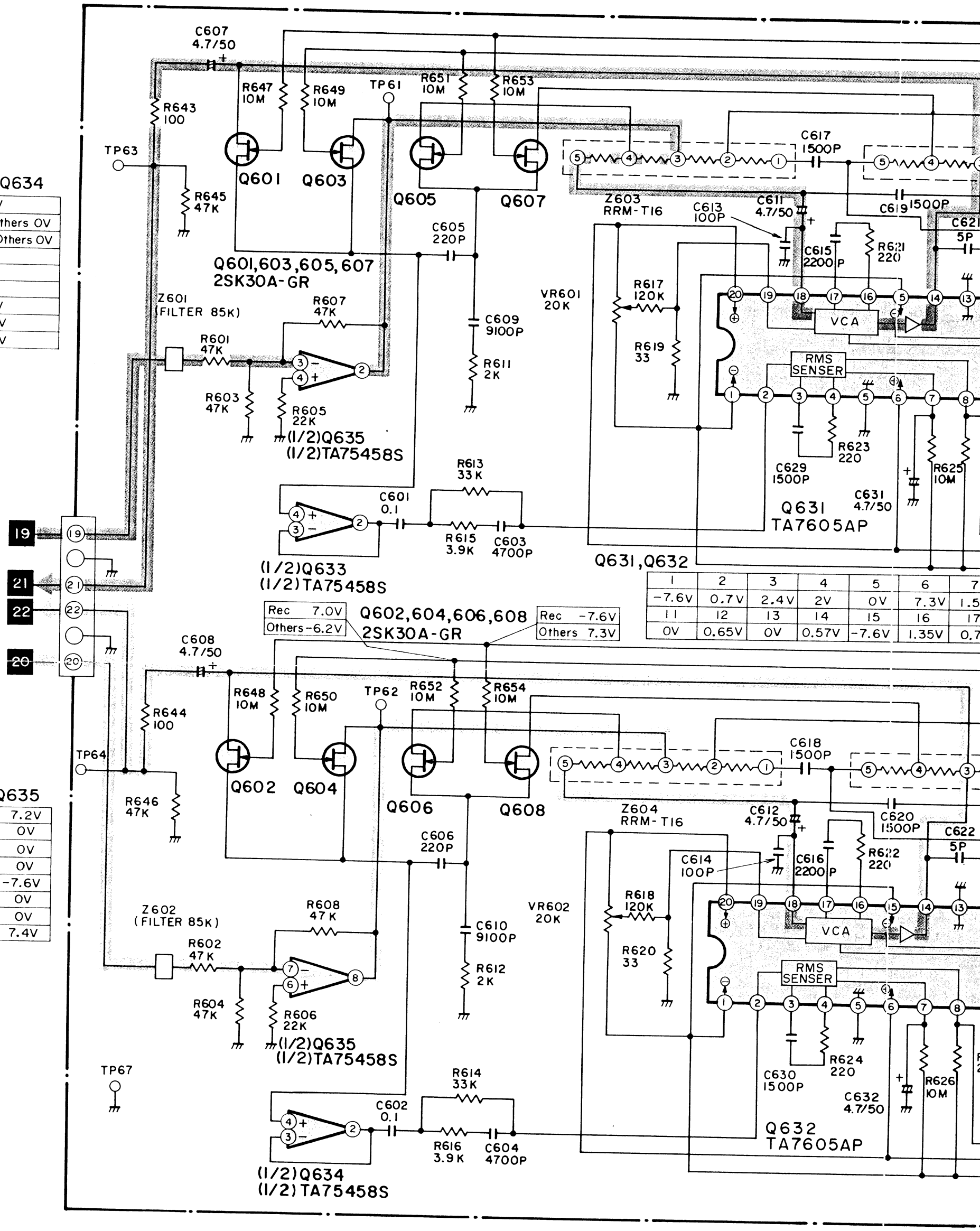
1	7.2V
2	0V
3	0V
4	0V
5	-7.6V
6	0V
7	0V
8	7.4V

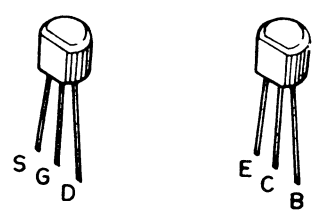
Q631,Q632

1	2	3	4	5	6	7
-7.6V	0.7V	2.4V	2V	0V	7.3V	1.5
11	12	13	14	15	16	17
0V	0.65V	0V	0.57V	-7.6V	1.35V	0.7

Rec 7.0V
Others -6.2V

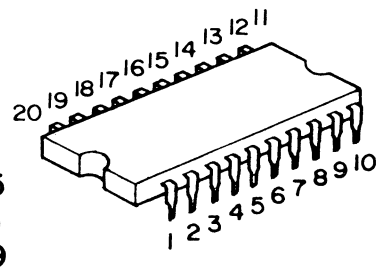
Rec -7.6V
Others 7.3V



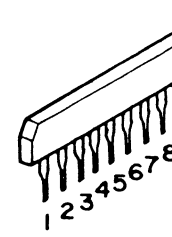


2SK30A

2SA1015
2SC1815
2SC1959



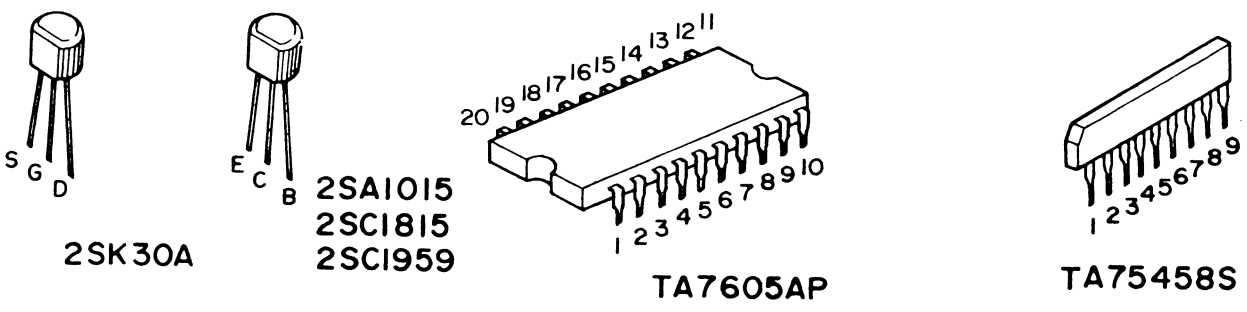
TA7605AP

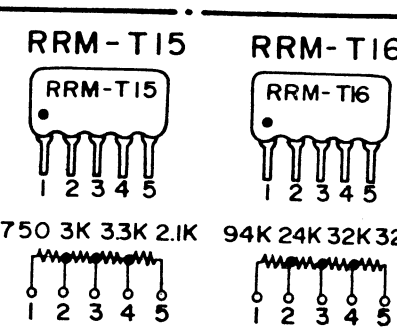


TA75458

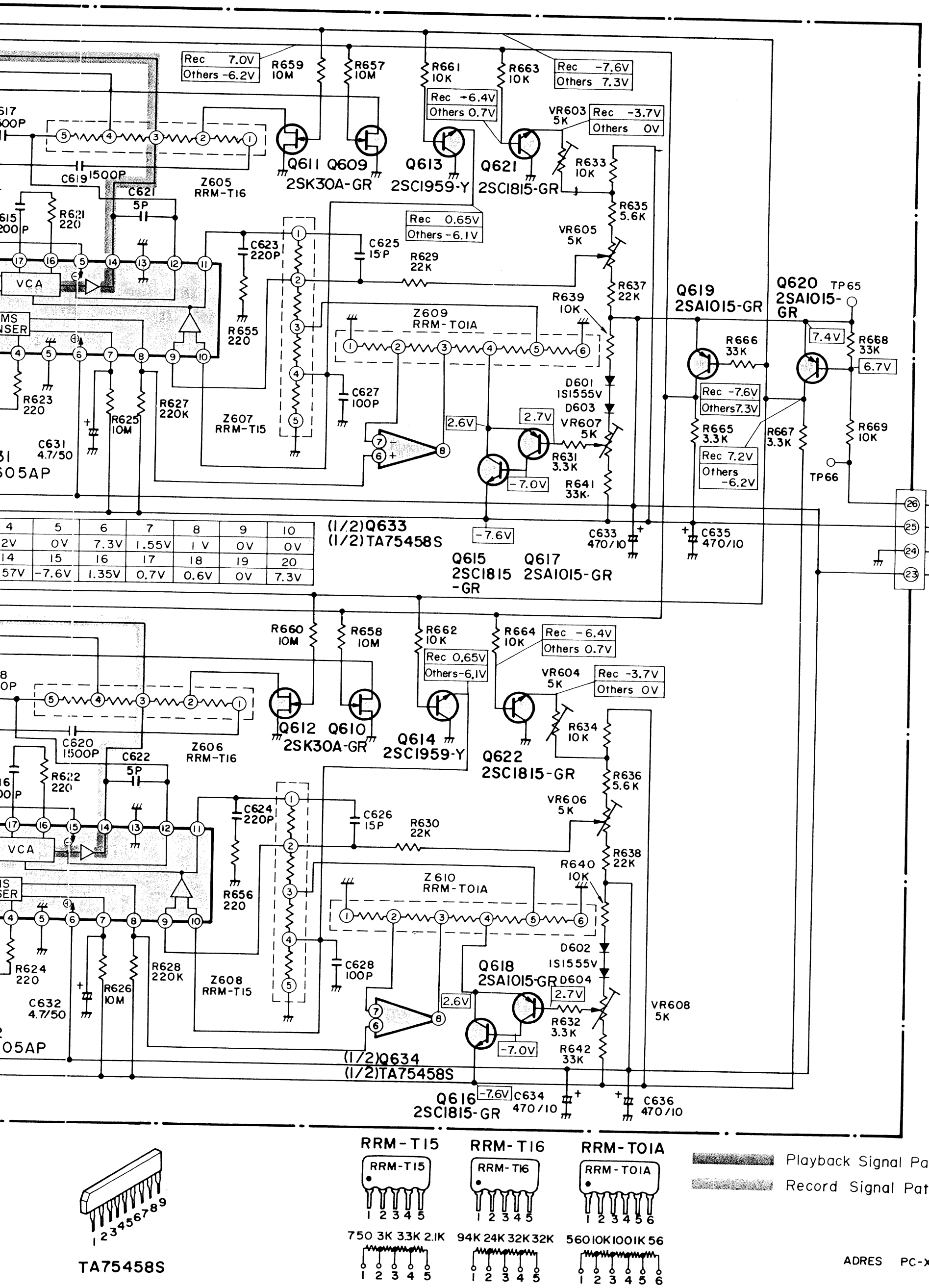
■ SCHEMATIC DIAGRAM (ADRES)

1	2	3	4	5	6	7	8	9	10
-7.6V	0.7V	2.4V	2V	0V	7.3V	1.55V	1V	0V	0V
11	12	13	14	15	16	17	18	19	20
0V	0.65V	0V	0.57V	-7.6V	1.35V	0.7V	0.6V	0V	7.3V





ATIC DIAGRAM (ADRES)



TA75458S

RRM-T15

RRM-T16

RRM-T01A

Playback Signal Path (Lch)

Record Signal Path (Rch)

ADRES PC-X60AD

Symbol No.	Part No.	Description
R959	22555473	47k ohm
R960	22545473	47k ohm
R961	22545102	1k ohm
R962	22555103	10k ohm
R963	22545102	1k ohm
R964	22555103	10k ohm
R965	22555102	1k ohm
R966	22555102	1k ohm
R967	22545122	1.2k ohm
R968	22545470	47 ohm
R969	22545473	47k ohm
R970	22545223	22k ohm
R971	22555103	10k ohm
R972	22555472	4.7k ohm
R973	22570303	47 ohm,2W, Metal Oxide Film
R974	22545102	1k ohm
R975	22555103	10k ohm
R976	22570300	27 ohm, 2W, Metal Film
R977	22545391	390 ohm
R978		Termistor D33A
R979	22555683	68k ohm
R980	22545471	470 ohm
R981	22545681	680 ohm
R982	22545561	560 ohm
R983	22555473	47k ohm
R984	22545104	100k ohm
VR401	22655425	50k ohm, Variable
VR402	22655420	20k ohm, Variable
VR403, 404	22658501	500 ohm, Semi-fixed
VR405, 406	22658494	50k ohm, Semi-fixed
VR407, 408	22658513	5k ohm, Semi-fixed
VR409, 410	22658496	200k ohm, Semi-fixed
VR601, 602	22658468	20k ohm, Semi-fixed
VR603, 604	22658488	5k ohm, Semi-fixed
VR605, 606	22658488	5k ohm, Semi-fixed
VR607, 608	22658488	5k ohm, Semi-fixed
VR901	22658491	300 ohm, Semi-fixed
ACCESSORIES		
	22164775	Cord, Junction
	22990374	Cleaner, Head
	22902617	Owner's Manual

TOSHIBA CORPORATION
2-1, GINZA 5-CHOME, CHUO-KU, TOKYO 104, JAPAN

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